U.S. DEPARTMENT OF COMMERCE
National Technical Information Service

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ACCOMPLISHMENT PLAN

REGION VIII, CHEYENNE RIVER BASIN

ENVIRONMENTAL PROTECTION AGENCY

4 DECEMBER 1972

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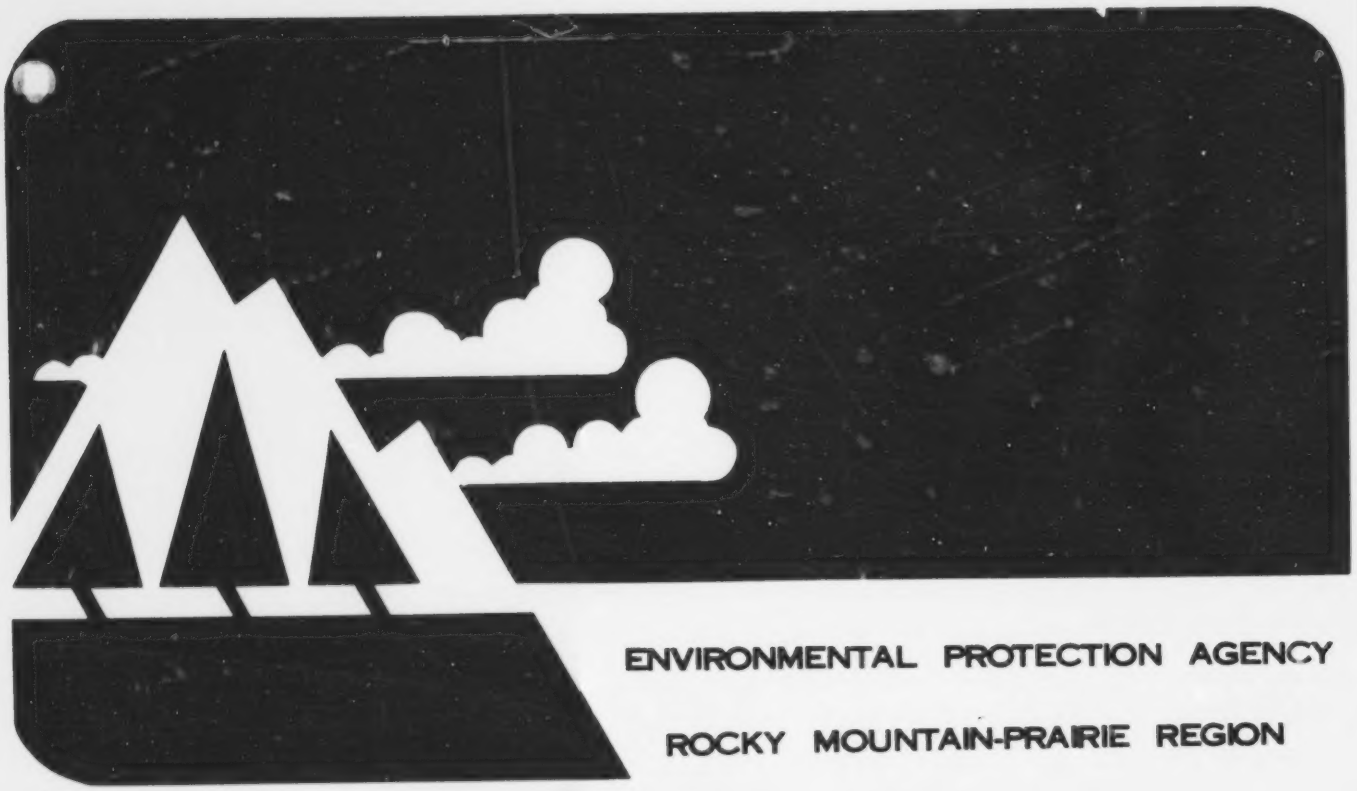

ENVIRONMENTAL PROTECTION AGENCY

ROCKY MOUNTAIN-PRAIRIE REGION

REGION VIII

CHEYENNE RIVER BASIN

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15. Supplementary Notes

16. Abstracts

The number of river and shoreline miles covered by the basin accomplishment plan are roughly estimated and include the more important river systems with pollution problems. The plan focuses on those portions of the Cheyenne River from the western South Dakota border to its confluence with the Missouri River on the eastern border along with tributaries having major point source pollution problems.

17. Key Words and Document Analysis. 17a. Descriptors

*Water quality,
*Cheyenne River Basin,
Water pollution,
Waste waters,
Sewage,
Industrial wastes,
Biochemical oxygen demand,
Coliforms,
Aquatic microbiology,
South Dakota,
Wyoming,
Nebraska,
Cheyenne River,
Belle Fourche River,
Whitewood Creek,
Rapid Creek.

17b. Identifiers/Open-Ended Terms

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SECTION A

NARRATIVE

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CHEYENNE RIVER BASIN ACCOMPLISHMENT PLAN

I. PRIORITY AREA IDENTIFICATION

The Cheyenne River Basin is roughly wedgelike in shape, and includes the northeastern corner of Wyoming, the southwestern corner of South Dakota, the northwestern corner of Nebraska, and the area through central South Dakota to the Missouri River.

The number of river and shoreline miles covered by the basin accomplishment plan are roughly estimated and include the more important river systems with pollution problems. They are as follows:

Cheyenne River	470± mi.
Belle Fourche River	380± mi.
Whitewood Creek	40± mi.
Rapid Creek	70± mi.
Total	960± mi.

II. PROBLEM ASSESSMENT

Although the Basin Plan encompases the entire River Basin, it focuses in on the major point source problem areas. Potential problems related to mining, agriculture, and power plant construction along the upper reaches of the Cheyenne, dictate that this portion of the Basin be considered in depth in the future. The present plan focuses on those portions of the Cheyenne River from the western South Dakota border to its confluence with the Missouri River on the eastern border along with tributaries having major point source pollution problems. A total of 710 river miles are included in the focused area of the plan, 400 miles of which do not meet water quality standards during some part of the year.

a. Population in the entire Basin amounted to about 140,000 in 1970, over 90 percent of which reside in the focused portion of the accomplishment plan area. Major tourist influxes are experienced through the Black Hills area during summer months and some growth is occuring in the population centers.

b. In terms of total numbers present, industry and industrial growth in the area are not problems. However, there is a major industrial mining source causing several hundred miles of stream to fall below ambient water quality standards. In addition, there is a potential radiation problem posed by a milling activity.

c. Approximately 400 miles of the 700 miles of river system under detailed consideration in the plan are not meeting present or proposed stream standards. Whitewood Creek, the Belle Fourche River and the Cheyenne River are grossly polluted by mine tailings and process wastes from the Homestake Mining Company and municipal wastes from the communities of Lead and Deadwood. Fecal coliform and total suspended solids criteria are oftem exceeded.

Nitrogen and phosphorus enrichment of Black Hills lakes and streams interferes with fish and wildlife propagation, reduces aesthetic values, affects domestic uses, and reduces recreational benefits. The source of these nutrients are municipal waste waters, domestic wastes from rural residential developments, livestock wastes, agricultural fertilizers, and natural decomposition of organic materials. Natural contributions outweigh man-caused contributions. The nutrient problem will be quantified and solutions identified by the comprehensive water quality management plan being developed by the Black Hills Conservancy Sub-District through a grant authorized under Section 3(c), PL 84-660 as amended.

Bacterial pollution occurs in the basin from livestock, recreation activities, and from domestic wastes. Many chemical pollutants occur naturally in the soils; however, mining operations account for some.

d. Both South Dakota and Wyoming have approved Water Quality Standards. These standards include water quality criteria and plan of implementation. The Standards need to be updated continuously to keep current with changing technology and changing water uses. Numerical criteria will have to be adopted for certain parameters now covered by general criteria. Whitewood Creek, from the Belle Fourche River to headwaters, changes its classification from Class "B" to Class "A" on December 31, 1973. A Class "B" stream is one with no beneficial use assigned whereas a Class "A" stream has an assigned beneficial use. There are no classification changes expected in FY 1973.

e. Several of the necessary new or expanded municipal treatment facilities are already under construction or grant offers have been made. The major municipal/industrial problem is the Homestake Mining Company discharges and the Lead-Deadwood municipal wastes. This problem along with seepage from uranium and vanadium waste storage ponds of Mines Development Inc., and uranium tailings piles were subjects of a western South Dakota Enforcement Conference in 1971. The problem is still being assessed and recommendations developed for the tailings and seepage problems. However, the Homestake Mining Company and Lead and Deadwood were put on an implementation schedule.

An environmental impact statement has been filed on this project. At present the project is well behind the established implementation schedule but this plan should insure completion at the earliest possible date, which is the first quarter of 1975.

f. Although many of the necessary new or expanded waste treatment facilities are under construction or have grant offers, there is an important need to continue working with these groups to assure that construction is completed as expeditiously as possible and that the plant operation conforms to design standards.

g. During the night of June 9-10, 1972, disastrous floods caused extensive damage and loss of life in Rapid City. Lesser impacts occurred over a four county area within the Cheyenne River Basin. The Mountain-Plains Federal Regional Council was assigned the responsibility for coordinating intermediate and long-term recovery efforts of Federal agencies. As part of an overall State/Federal management team, a Federal task force was given the primary responsibility of coordinating Federal inputs and working with state and local representatives. EPA, as a member of both the council and the task force, is involved in the area's recovery effort.

III. AGENCY AND/OR OPERATIONAL OBJECTIVES

1. The water quality of the Cheyenne River Basin is to meet existing and proposed standards by FY 1975.

2. Immediate and visible reductions in pollution from specific municipalities and industries polluting isolated but substantial reaches of stream are estimated to be as follows:

FY	BOD_5 (lb/da)	TSS (lb/da)
1973	448	317
1974	506	6,569

IV. APPROACH

The objectives outlined above will be achieved through the following program elements and their listed activities:

1. Municipal Waste Treatment Construction Grants (AB 1164)- assist in the financing and construction of nine new waste water treatment plant improvements which will increase plant efficiency and solve some of the water quality problems.

2. Refuse Act Permits (3B2124) - obtain letters of commitments to reduce pollution loadings from several industries.

3. Operation and Maintenance (2B8163) - to ensure that operation and maintenance practices are maximized.

4. Water Quality Planning (2B3149) - monitor 3(c) Grant, assist in the upgrading of ambient and effluent standards, and provide guidance in the effective management of the water resource to maintain or improve water quality. Participate in flood recovery program.

5. Water Quality Monitoring and Water Pollution Source Surveillance (2B2147) and (3B1123) - carry out recommendations of Enforcement Conference and assess impact of actions.

6. Manpower Training (2B7160) - to ensure that waste water treatment plant operators are properly trained and stay current with advancing technology.

7. Public Affairs (5T2215) - to carry out an aggressive public information program concerning pollution in the area.

8. Environmental Impact Statements Review (2B6117) - Review environmental statements of construction grants projects and 3(c) grant.

INFORMATION SOURCES USED IN OBTAINING BASIN WASTE DISCHARGE AND WATER QUALITY DATA FOR SOUTH PLATTE BASIN

1) RAPP Permit Applications

2) STORET Water Quality Data, including data from

   a. USGS-EPA
   b. State of South Dakota
   c. Black Hills Conservancy Sub-District
   d. Municipal Inventory

3) EPA DFIDC, Region VII, and Region VIII Report, "Pollution Affecting Water Quality of the Cheyenne River System, Western South Dakota, September 1971."

4) EPA, Region VIII Report, "Evaluation of the Impact of the Mines Development, Inc. Mill on Water Quality Conditions in the Cheyenne River, September 1971."

5) USPHS Report, "Summary Report on Quality of Interstate Waters Cheyenne River, Including Beaver Creek, Wyoming-South Dakota, June 1962."

6) Black Hills Conservancy Sub-District Report, "Comprehensive Water Quality Management Plan for the Black Hills Region, Plan of Study, January 1971."

7) South Dakota Committee on Water Pollution, "Interim Basin Plan for Central Missouri River Basin, South Dakota, January 28, 1972."

8) USGS-Compilation of Records of Surface Waters of the United States.

SECTION B

BASIN LOAD SUMMARY

PRIORITY BASIN WORK SHEET

Date _____
STORET Minor Basin ID No. _____
Region VTTT
State(s) South Dakota & Wyoming

Name of Basin CHEYENNE RIVER

1. Area covered:

Headwaters to Lake Oahe

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2. Water quality objectives:

Parameter	(a) Current criteria (see WQS) mg/l	(b) EPA Objective: Minimum Acceptable Ambient Level (See Table 4) mg/l	(c) Actual Level at Worst Time of Yr. (See Table 2) mg/l	Accuracy (% +) (Regional est.) ± %
BOD_5	No standard except for intermittent streams which is 30 mg/l.			
TSS	90	90	6,500 ml	10

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3. Estimated pollution load--all sources (average FY 72):

	Load (See Table 4) pounds/day	Accuracy (% ±) ± %
BOD_5	3,210	10
TSS	5,480,260	10

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4. Estimated pollution load reduction required to meet EPA water quality objectives derived from 2(c) - 2(b):

	Required Reduction (Σ of Table 4) pounds/day	Accuracy (% ±) ± %
BOD_5	594	10
TSS	5,477,529	10

---

5. Reduction firmly committed by FY 72 and prior year actions:

	Year of Actual Reduction FY 73 lbs/day	FY 74 lbs/day	FY 75 lbs/day	FY 76 lbs/day
BOD_5	448	478	510	794
TSS	317	348	381	5,471,285

---

6. Additional reductions to be obtained by FY 73 and FY 74 commitments:

	Year of Actual Reduction FY 73 lbs/day	FY 74 lbs/day	FY 75 lbs/day	FY 76 lbs/day	(See Table 4)
BOD_5	0	28	109	109	8<
TSS	0	6,221	6,360	6,360	

7. Increases in pollution discharges expected:

	Year of Actual Increase			
	FY 73	FY 74	FY 75	FY 76
	lbs/day	lbs/day	lbs/day	lbs/day
BOD_5	24	79	88	121
TSS	26	58	92	127

8. Total reductions to be obtained--sum of 5 and 6 above:

	Year of Actual Reduction			
	FY 73	FY 74	FY 75	FY 76
	lbs/day	lbs/day	lbs/day	lbs/day
BOD_5	448	506	1[illegible]	903
TSS	317	6,569	[illegible]	5,477,645

9. Total reductions required--sum of 4 and 7 above:

	Year of Actual Reduction			
	FY 73	FY 74	FY 75	FY 76
	lbs/day	lbs/day	lbs/day	lbs/day
BOD_5	618	673	682	715
TSS	5,477,555	5,477,587	5,477,621	5,477,656

10. Year in which minimum acceptable water quality levels are to be achieved--compare 8 and 9 above:

FY 197[illegible]

11. If figures for items 2 through 7 above are not available, please provide estimate of when they will become available through monitoring and other activities:

Are items 3, 5, and 6 above derived from detailed discharger inventories?

Yes

12. Key pollutants, if any, for which a weight or other quantity measure is not appropriate:

(Note special problems and comments) Other significant pollutants that will be abated are toxic metals. Nutrients are also a problem in the basin. The major nutrient load comes from natural sources. The 3(c) grant will determine if it may be necessary in the future to minimize the nutrient loads from municipal facilities.

PLANNED ACCOMP' SHMENTS SCHEDULE

1. Type of Plan a. ☐ Sub-Element b. ☐ Part. Sub-Elem. c. ☐ Geo. Area	2. Program Sub-Element Title Water Quality Planning	3. Sub-Element No. 2B3149	4. Sheet No.
	5. Geographical Area Title Cheyenne River Basin	6. Geo. Area Code	7. Priority

8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS	73	74
	1	4/1/73	Review Nisland WWTP application	0.5	
	2	4/1/73	Review Keystone WWTP application	0.5	
	3	6/15/73	Review Hot Springs WWTP application	0.5	
	4	10/1/73	Monitor BHCSD 3(c) Planning Grant	1.5	0.5
	5	5/15/74	Review Sturgis WWTP application		0.4
	6	Indefinite	Coordinate Flood Response	1.2	0.5
	7	12/1/73	Assist in the development of effluent criteria for industrial dischargers	0.8	0.6
	8	continuing	Monitoring Cheyenne River Basin Accomplishment Plan	1.0	1.0

12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date	16. Approved for RPIO
a. 6.0	b.	a. 3.0	b.			

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

1. Type of Plan a. ☐ Sub-Element b. ☐ Part. Sub-Elem. c. ☐ Geo. Area	2. Program Sub-Element Title Water Quality Standards	3. Sub-Element No. 2B1143	4. Sheet No.
	5. Geographical Area Title Cheyenne River Basin	6. Geo. Area Code	7. Priority

8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS	73	74
	1.	12/1/72	Assist in evaluating water quality standards for streams for		
			the BHCSD 3(c) Grant	0.4	0.4
			Assist in developing effluent criteria for the following		
			industrial dischargers:		
	2.	4/1/73	Spearfish National Fish Hatchery	0.2	
	3.	4/1/73	Birdsall Sand & Gravel	0.2	
	4.	4/1/73	Dakota Black Co.	0.2	
	5.	4/1/73	Pete Lien & Sons, Inc.	0.2	
	6.	9/1/73	Ellsworth Air Force Base		0.2
	7.	9/1/73	Air Products & Chemicals		0.2
	8.	12/1/73	Kiesling Oil Co.		0.2

12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date	16. Approved for RPIO
a. 1.2	b.	a. 1.0	b.			

Planned Accomplishments

11

PLANNED ACCOMPLISHMENTS SCHEDULE

1. Type of Plan a. ☐ Sub-Element b. ☐ Part. Sub-Elem. c. ☐ Geo. Area	2. Program Sub-Element Title: Water Quality Enforcement (S&A)	3. Sub-Element No.: 3B1123	4. Sheet No.
	5. Geographical Area Title: Cheyenne River Basin	6. Geo. Area Code	7. Priority

8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS	73	74
	1	1/1/73	Complete field sampling of fish & bottom sediment mercury study in Oahe Reservoir (analytical work) and report recommendations	2.0	
	2	11/30/72	Complete quarterly sampling of 20 wells	1.0	
	3	12/31/73	Field sampling of radiological & chemical concentrations in Cottonwood Creek and Cheyenne River	2.0	2.0
	4	12/31/73	Eliminate seepage from the Mine Development ponds and have a definitive sand tailings stabilization program in progress		
	5	Continuing	Unscheduled sampling that may be required		2.5

12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date	16. Approved for RPIO
a. 5.0	b.	a. 4.	b.			

Planned Accomplishments

12

PLANNED ACCOMPLISHMENTS SCHEDULE

1. Type of Plan a. ☐ Sub-Element b. ☐ Part. Sub-Elem. c. ☐ Geo. Area	2. Program Sub-Element Title: Construction Grant Operations	3. Sub-Element No. 2B8162	4. Sheet No.
	5. Geographical Area Title	6. Geo. Area Code	7. Priority

8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS	73	74
	1	10/31/72	Complete construction of Hill City WWTP	0.2	
	2	11/15/72	Complete construction of Spearfish WWTP	0.2	
	3	12/1/72	Work out agreement with BuRec to serve as a consultant on		
			the structural design of the tailings pond for Lead-Deadwood	0.2	
	4	1/1/73	Contact keystone thru state about possible constr. grant	0.1	
	5	1/15/73	Go thru state to get Nisland to apply for grant	0.1	
	6	1/15/73	Pre-application hearing for Hot Springs construction grant	0.05	
	7	3/1/73	Pre-application hearing for Keystone	0.1	
	8	3/15/73	Application for a grant from Hot Springs	0.05	
	9	8/15/73	Complete plans and specifications for the Lead-Deadwood WWTP		0.2
	10	9/1/73	Begin construction of the Keystone WWTP		0.5
	11	9/30/73	Approve plans for the Lead-Deadwood WWTP		0.1
	12	10/1/73	Complete construction of Custer WWTP	0.4	0.2
	13	1/15/74	Contact the state on Sturgis applying for a grant for		
			interceptor sewer		0.10

12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date	16. Approved for EPIC
a.	b.	a.	b.			

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

1. Type of Plan a. ☐ Sub-Element b. ☐ Part. Sub-Elem. c. ☐ Geo. Area	2. Program Sub-Element Title	3. Sub-Element No.	4. Sheet No.
	5. Geographical Area Title	6. Geo. Area Code	7. Priority

8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS	73	74
	14	2/15/74	Pre-application conference-Sturgis		0.1
	15	3-15-74	Application review and process grant - Sturgis		0.1
	16	6/1/74	Begin construction of Sturgis interceptor		0.1
	17	9/1/74	Complete construction of Keystone WWTP		0.2
	18	10/1/74	Complete construction of Nisland WWTP	0.4	0.4
	19	10/1/74	Complete construction of Hot Springs WWTP	0.4	0.4
	20	9/1/74	Complete construction of Keystone WWTP		0.2
	21	12/1/74	Complete construction of Sturgis interceptor		0.2
	22	11/1/75	Complete construction of Lead-Deadwood WWTP		1.5

12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date	16. Approved for RPIO
a. 2.3	b.	a. 4.1	b.			

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

1. Type of Plan a. ☐ Sub-Element b. ☐ Part. Sub-Elem. c. ☐ Geo. Area	2. Program Sub-Element Title: Construction Grants Administration	3. Sub-Element No.: 2B8316	4. Sheet No.
	5. Geographical Area Title: Cheyenne River Basin	6. Geo. Area Code	7. Priority

8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS	73	74
			Process construction grants for the following facilities:		
	1	10/31/72	Hill City WWTP	0.1	
	2	11/15/72	Spearfish WWTP	0.1	
	3	10/1/73	Custer WWTP	0.1	0.1
	4	9/1/74	Keystone WWTP	0.1	0.2
	5	10/1/74	Nisland WWTP	0.3	0.1
	6	10/1/74	Hot Springs WWTP	0.2	0.1
	7	12/1/74	Sturgis Interceptor		0.2
	8	11/1/75	Lead-Deadwood WWTP		0.2

12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date	16. Approved for RPIO
a. 0.90	b.	a. 0.90	b.			

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

1. Type of Plan a. ☒ Sub-Element b. ☐ Part. Sub-Elem. c. ☐ Geo. Area	2. Program Sub-Element Title: Operation and Maintenance	3. Sub-Element No.: 2B8163	4. Sheet No.
	5. Geographical Area Title: Cheyenne River Basin	6. Geo. Area Code	7. Priority

8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS		
			Prepare O&M manuals for the following facilities and O&M inspections.		
		10/31/72	Hill City WWTP	0.2	
		10/1/73	Custer WWTP	0.2	0.1
		4/15/74	Spearfish WWTP	0.2	0.1
		9/1/74	Mt. Rushmore-Keystone WWTP	0.1	0.2
		10/1/74	Lead-Deadwood WWTP		0.2
		10/1/74	Hot Springs WWTP	0.1	0.1
		10/1/74	Nisland WWTP	0.2	0.1
		Continuing	Sturgis WWTP		0.1
		Continuing	Rapid City WWTP	0.1	0.1
		Continuing	Develop State O&M programs and review plant staffing plans,		
				0.4	0.5

12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date	16. Approved for RPO
a. 1.5	b.	a. 1.5	b.			

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

1. Type of Plan a. ☐ Sub-Element b. ☐ Part. Sub-Elem. c. ☐ Geo. Area	2. Program Sub-Element Title Water Supply	3. Sub-Element No. 2C5226	4. Sheet No.
	5. Geographical Area Title Cheyenne River Basin Program	6. Geo. Area Code	7. Priority

8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS
		6-73	Conduct inventory of all public water supplies including information
			concerning population served, treatment, production, and capacity.

12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date	16. Approved for RPIO
a. 2.0	b.	a. 0	b.			

17

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

1. Type of Plan a. ☐ Sub-Element b. ☐ Part. Sub-Elem. c. ☐ Geo. Area	2. Program Sub-Element Title: Federal Activities/Water	3. Sub-Element No.: 2B6116	4. Sheet No.
	5. Geographical Area Title	6. Geo. Area Code	7. Priority

8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS	73	74
	1.	3/15/73	Review construction specifications for Mt. Rushmore WWTP	0.1	
	2.	4/1/73	Assist in establishing effluent criteria for Spearfish National Fish Hatchery	0.1	
	3.	9/1/73	Assist in establishing effluent criteria for Ellsworth Air Force Base	0.1	

12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date	16. Approved for RPIO
a. 0.3	b.	a.	b.			

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

1. Type of Plan a. ☐ Sub-Element b. ☐ Part. Sub-Elem. c. ☐ Geo. Area	2. Program Sub-Element Title: Environmental Impact Statement Review/Water	3. Sub-Element No.: 2B6117	4. Sheet No.
	5. Geographical Area Title: Cheyenne River Basin	6. Geo. Area Code	7. Priority

8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS	73	74
		4-1-73	Complete EIS for Nisland WWTP	1.8	
		6/15/73	Complete EIS for Hot Springs WWTP	1.8	
		10/1/73	Complete EIS for BHCSD 3(c) Grant	2.0	
		6/1/74	Complete EIS for Sturgis WWTP		1.8

12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date	16. Approved for RPIO
a. 5.6	b.	a. 1.8	b.			

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

1. Type of Plan a. ☐ Sub-Element b. ☐ Part. Sub-Elem. c. ☐ Geo. Area	2. Program Sub-Element Title Refuse Act Permits	3. Sub-Element No. 382124	4. Sheet No.
	5. Geographical Area Title Cheyenne River Basin	6. Geo. Area Code	7. Priority

8. Code	9. No	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS	73	74
		10/31/72	S.D. Cement Plant-recommend connection to Rapid City Sewer	0.4	
		1/1/73	S.D. Cement Plant - Letter of commitment	0.5	
		1/1/73	Mines Development Inc. - seal storage for liquid uranium and vanadium.		
			mill wastes.	0.6	0.6
		4/1/73	Pete Lien - Develop effluent criteria	0.5	
		4/1/73	Spearfish National Fish Hatchery-develop effluent criteria	0.5	
		4/1/73	Birdsall-develop effluent criteria	0.5	
		4/1/73	Dakota Block-develop effluent criteria	0.5	
		6/1/73	S. Dakota Cement Plant - connection to Rapid City sewer	0.3	
		6/1/73	Spearfish NFH - letter of commitment	0.3	
		6/1/73	Birdsall - letter of commitment	0.3	
		6/1/73	Dakota Block - letter of commitment	0.3	
		6/1/73	Pete Lien - Letter of commitment	0.3	
		9/1/73	Ellsworth AFB - develop effluent criteria	0.4	0.3
		9/1/73	Air Products & Chemicals - develop effluent criteria.	0.4	0.2

12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date	16. Approved for RPIO
a.	b.	a.	b.			

Planned Accomplishments

PLANNED ACCOMPL. MENTS SCHEDULE

1. Type of Plan a. ☐ Sub-Element b. ☐ Part. Sub-Elem. c. ☐ Geo. Area	2. Program Sub-Element Title: Refuse Act Permits (continued)	3. Sub-Element No.: 3B2124	4. Sheet No.
	5. Geographical Area Title: Cheyenne River Basin	6. Geo. Area Code	7. Priority

8. Code	9. No.	10. Sched Date of Comp.	11. PLANNED ACCOMPLISHMENTS		
		12/1/73	Kiesling Oil - develop effluent criteria		0.5
		12/1/73	Air Products & Chemicals - letter of commitment		0.3
		3/1/74	Ellsworth AFB - Letter of commitment		0.3
		3/1/74	Kiesling Oil Co. - letter of commitment		0.3
		6/1/74	Spearfish NFH - monitor		0.5
		6/1/74	Birdsall - monitor		0.5
		6/1/74	Dakota Block - monitor		0.5
		6/1/74	Pete Lien - monitor		0.4
		12/1/74	Kiesling Oil - monitor		0.4
		12/1/74	Air Products & Chemicals - monitor		0.5
		3/1/75	Ellsworth AFB - monitor		0.5
		Continuing	Mines Development, Inc. - monitor	0.2	0.2

12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date	16. Approved for RPIO
a. 6.0	b.	a. 6.0	b.			

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

1. Type of Plan a. ☐ Sub-Element b. ☐ Part. Sub-Elem. c. ☐ Geo. Area	2. Program Sub-Element Title: Water Quality Monitoring	3. Sub-Element No.: 2B2147	4. Sheet No.
	5. Geographical Area Title: Cheyenne River Basin	6. Geo. Area Code	7. Priority

8. Code	9. No.	10. Sched. Date of Completion	11. PLANNED ACCOMPLISHMENTS		
			Establish water quality monitoring stations & monitor the following		
			completed municipal facilities:	73	74
		10/31/72	Hill City WWTP	0.2	0.1
		10/1/73	Custer WWTP		.05
		4/15/74	Spearfish WWTP	.05	.05
		9/1/74	Keystone-Mt. Rushmore WWTP		.05
		10/1/74	Hot Springs WWTP		0
		10/1/74	Nisland WWTP		0
		12-1-75	Lead-Deadwood WWTP		

12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date	16. Approved for RPIO
a. 0.25	b.	a. 0.25	b.			

Planned Accomplishments

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PLANNED ACCOMPLISHMENTS SCHEDULE

1. Type of Plan a. ☒ Sub-Element b. ☐ Part. Sub-Elem. c. ☐ Geo. Area	2. Program Sub-Element Title Manpower Training	3. Sub-Element No. 2B7160	4. Sheet No.
	5. Geographical Area Title Cheyenne River Basin	6. Geo. Area Code	7. Priority

8. Code	9. No.	10. Sched. Date of Comp.	11. PLANNED ACCOMPLISHMENTS	
		continu.	Support WWTP operator training programs	1.2
		continu.	In-house manpower planning for WWTP	0.9
		continu.	Develop manpower planning function	0.8
		continu.	Work with Wyoming on development of certification program	0.5
		continu.	Coordinate field study training program for WWTP Operators	0.5

12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date	16. Approved for RPIO
a. 0.9	b.	a. 1.5	b.			

Planned Accomplishments

PLANNED ACCOMPLISHMENTS SCHEDULE

1. Type of Plan a. ☐ Sub-Element b. ☐ Part. Sub-Elem. c. ☐ Geo. Area	2. Program Sub-Element Title Public Affairs	3. Sub-Element No. 512215	4. Sheet No.
	5. Geographical Area Title Cheyenne River Basin	6. Geo. Area Code	7. Priority

8. Code	9. No.	10. Sched. Date of Comp.	11. PLANNED ACCOMPLISHMENTS	
		10/1/73	Assist BHCSD develop slide program for 3(c) Grant	1.75
		continu.	Coordinate public information with state & private agencies	1.25
		continu.	Utilize film documentaries and television to carry message of water pollution	1.25
		continu.	Publish articles in appropriate publications	1.00

12. FY 1973		13. FY 1974		14. Prepared by & Date	15. Reviewed by & Date	16. Approved for RPIO
a. 2.0	b.	a. 1.0	b.			

Planned Accomplishments

FORM VI

PRIORITY BASIN ACCOMPLISHMENTS: SEMI-ANNUAL PREPARATIONS MILESTONES REPORT DATE SUBMITTED: _____

REGION VIII _____ HALF, 19 72 BASIN: Cheyenne

PREPARED BY: J. Tucker (Name) Water Resources Planner (Title) TEL. 307 637-4963

APPROVED BY: _____ (Name) _____ (Title) _____ (Initials)

MILESTONES	DATE MILESTONE ATTAINED or TO BE ATTAINED	LIST ANY MISSING OR INADEQUATE PREPARATIONS AND INDICATE FOR EACH PERIOD IN CURRENT STATUS. DISCUSS THOSE NEEDING HEADQUARTERS ATTENTION, INCLUDING REASONS, CORRECTIVE MEASURES, AND IMPLICATIONS FOR FUTURE PROGRESS. USE SUPPLEMENTARY SHEETS AS NECESSARY.
CRITICAL WQ DATA OBTAINED No	1/1/73	Will be supplied by BHCSD 3(c) Grant.
CRITICAL EFFLUENT DATA OBTAINED No	1/1/74	Data supplied is by the industry. Need to do more EPA effluent data collection.
NECESSARY MODELING COMPLETED N/A		
10CFR/FULLY DEVELOPED PLANS FOR AREA APPROVED AND NO REVISIONS NEEDED No	10/1/73	BHCSD 3(c) will meet requirements of fully developed plans.
STATE PRIORITIES FOR 1 & 5 YEAR NEEDS CONFORMED WITH ACCOMPLISHMENT PLAN Yes		
EFFLUENT GUIDELINES FOR CRITICAL SOURCES AVAILABLE Yes		
WQ CRITERIA COVERING ALL CRITICAL PARAMETERS IN AREA APPROVED AND NO REVISIONS NEEDED No	1/1/73	BHCSD (3c) Grant will review criteria and make recommendations if necessary.
USE DESIGNATIONS AND NONDEGRADATION STATEMENTS FOR AREA WATERS APPROVED AND NO REVISIONS NEEDED No	1/1/73	BHCSD (3c) Grant may recommend upgrading of some streams. State has designated Whitewood Creek to change use designation by 12/31/73.
IMPLEMENTATION SCHEDULES COVERING THE AREA'S DISCHARGERS APPROVED AND CONFORMED WITH ACCOMPLISHMENT PLAN Yes		The primary dischargers which are located along Whitewood Creek, are under implementation schedules and plan conforms.

25A

PRIORITY RANKING OF DISCHARGES IN CHEYENNE BASIN
Top Ten Grouping: Not in of priority within group

(1) Lead-Deadwood Sanitary District, S.D.

(2) Hill City, S.D.

(3) Rapid City, S.D. 1/

(4) Ellsworth AFB: S.D. (Municipal) 1/

(5) Custer, S.D.

(6) Mines Development, Inc., Edgemont, S.D. 2/

(7) South Dakota Cement Plant, Rapid City, S.D.

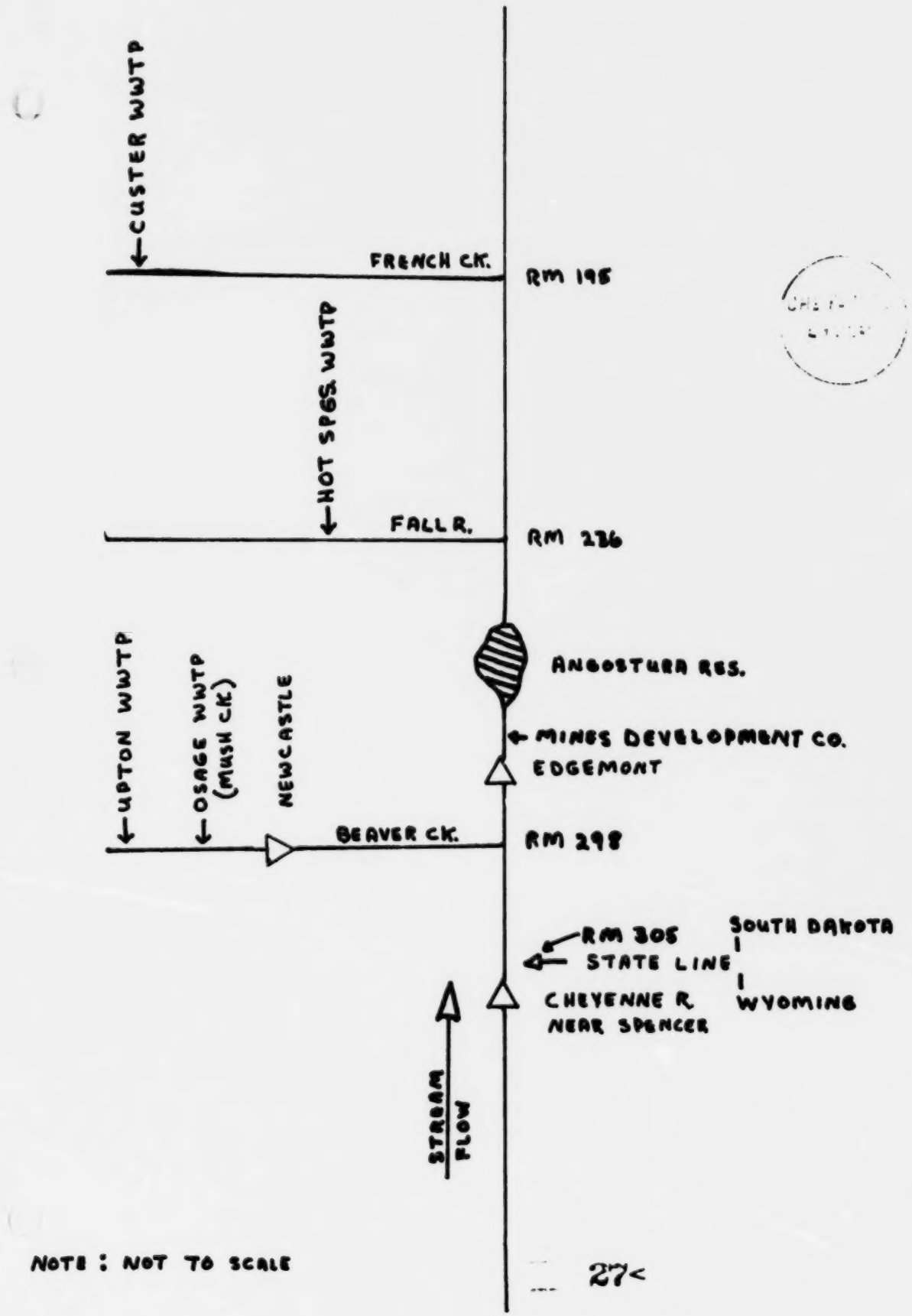
(8) Upton, Wy.
Faith, S.D.
Hermosa, S.D.
Belle Fourche, S.D.
Spearfish, S.D.
Hot Springs, S.D.
Sturgis, S.D.
Nisland, S.D.
Whitewood, S.D.
Newell, S.D.

(9) Ellsworth AFB, S.D. (industrial)

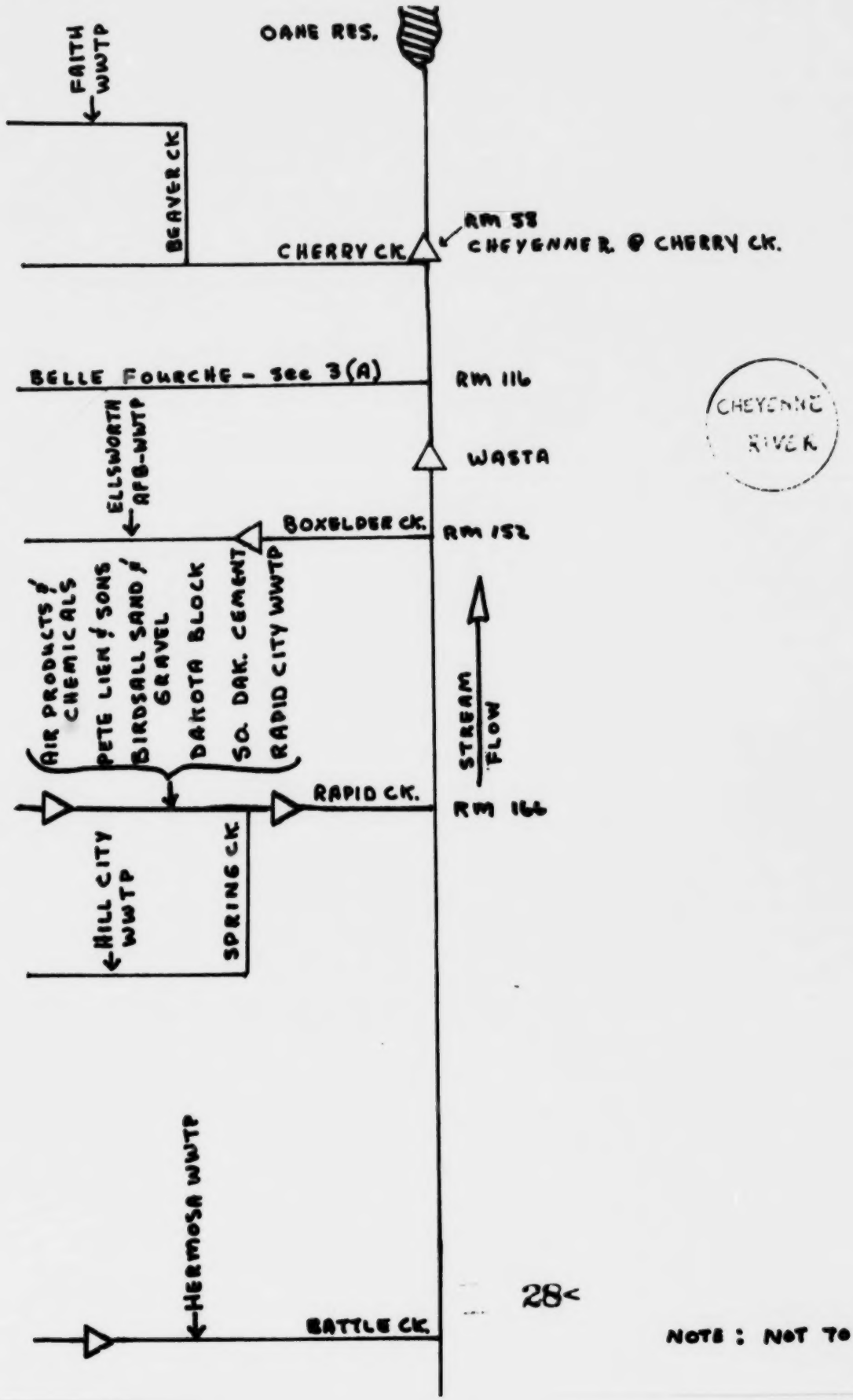
(10) USDI Spearfish National Fish Hatchery, S.D

1/ Not a problem as such. Present facilities are adequate to take care of needs beyond FY 76. Ranked high on priority list because total treated wastes discharged is large relative to other point sources in the basin.

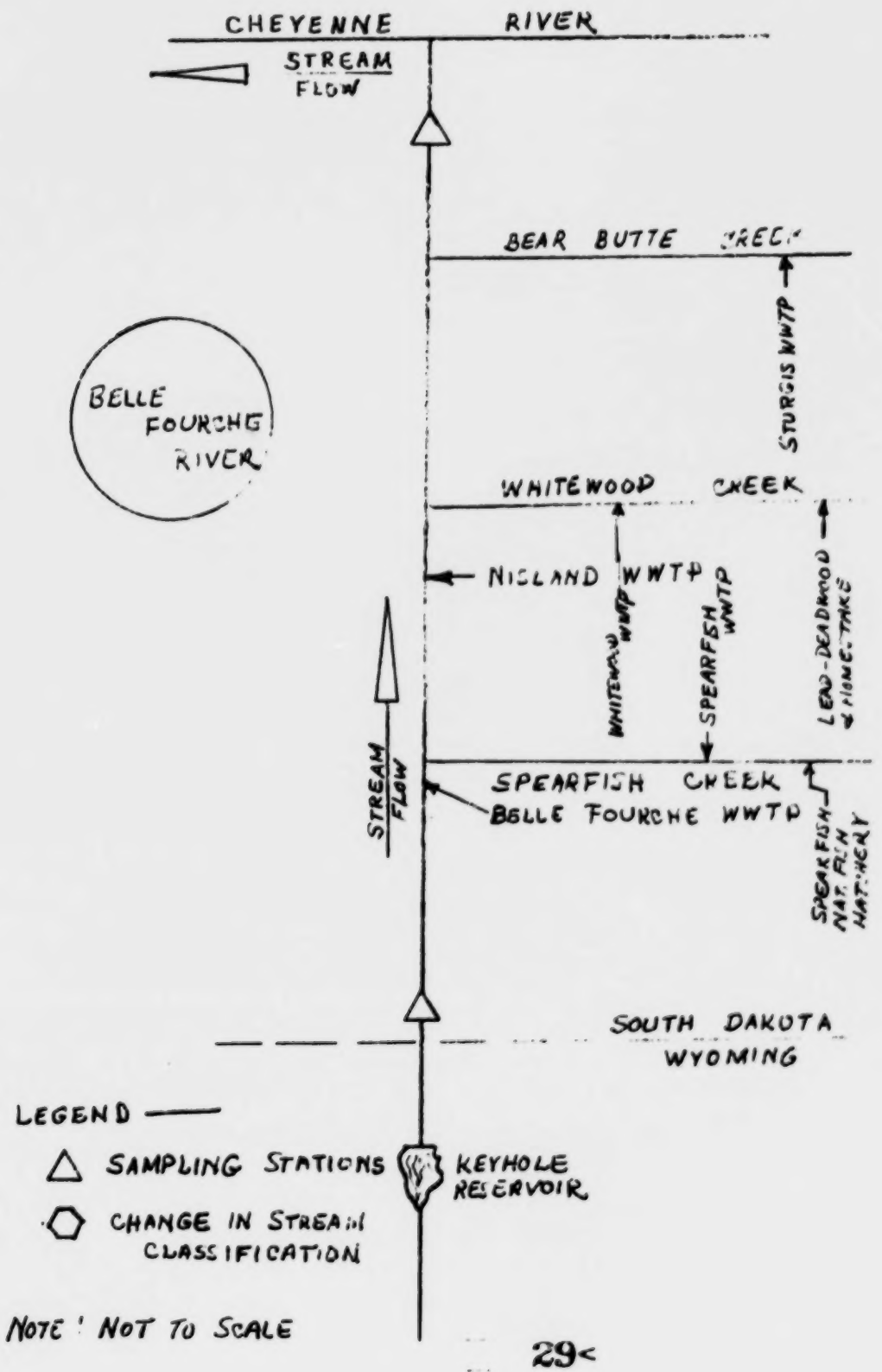
2/ Not a direct discharge - seepage impacts water quality - Also, wind and water transport of uranium sand tailings into the Cottonwood Creek - Cheyenne River system.



NOTE : NOT TO SCALE



NOTE : NOT TO SCALE


CHEYENNE RIVER
STREAM FLOW
BEAR BUTTE CREEK
STURGIS WWTP
BELLE FOURCHE RIVER
WHITEWOOD CREEK
NISLAND WWTP
WHITEWOOD WWTP
SPEARFISH WWTP
LEAD-DEADWOOD & HOMESTAKE
STREAM FLOW
SPEARFISH CREEK
BELLE FOURCHE WWTP
SPEARFISH NAT. FISH HATCHERY
SOUTH DAKOTA
WYOMING
LEGEND
SAMPLING STATIONS
KEYHOLE RESERVOIR
CHANGE IN STREAM CLASSIFICATION
NOTE: NOT TO SCALE

PRIORIT ASIN ACCOMPLISHMENTS: ANNUAL WQ ACCOMPLISHMENT' EPORT

REGION VIII CALENDAR YEAR IS 1972 DATE SUBMITTED _____

PREPARED BY J. W. Tucker, Jr. Water Resources Planner TEL 303-837-4963

APPROVED BY _____ _____ _____
(Name) (Title) (Initials)

AREA	POPULATION (Based on 1970 Census)	River Miles or Area Equivalent for Lakes, Estuaries, Etc.			
		Meets Standards (Miles and/or Area)	Not at Standards (Miles and/or Area)	Basin Totals (Miles and/or Area)	
				Basin Miles	Area In Total Basin
Totals All Priority Basins in Region					
Basin Cheyenne River	140,000 ±	830 ±	400 ±	980 ±	
Basin _____					
Basin _____					

1/ Includes only major streams and streams that have a point discharge.

30<

TABLE II - AMBIENT WATER QUALITY AT NEAREST DOWNSTREAM MONITORING STATION

____Cheyenne River Basin

Data) Minimum
Listing) Maximum
Mean

	BASIC PARAMETERS - MG/L UNLESS APPLICABLE												
	FLOW	PH	TEMP °F	DO	TDS	TSS	NH_3-N OR NO_3-N	TOTAL P	(FECAL) (TOTAL) BACT.	GREASE & OIL	TOXIC METALS	OTHER TOXICS	5-day BOD S.S. BASE FLOW
NAMES SOURCES AND R.M. 1/													
POINT (headwaters)													
Cheyenne River at Edgemont, S. Dakota KM 205	0.31 609 65	4.2 8.4 7.7	no value 25 10.5	0.2 11.8 8.6	1100 7100 3890	no data	0.0) 2.4) NH_3-N 0.4) 0.00) 0.01) NO_3-N 0.0)	0.0 5.8 0.5	0 5100)Tot 1160)1970 1 210)fecal 65)coli	3 measure- -lments none detected	0.1)Hg 0.3)Tot 0.2)mg/l	Numerous parameters see print- out	0.5 9.4 2.9
							2.0) NH_3-N 0.4)						
Cheyenne River at Wasta only major trib. between Chis point & confluence with Chis Belle Fourche is Elk Creek	no data	6.8 8.2 7.7	86 oF 76 oF 64 oF	6.7 12.2 8.6	20 1935 1390	40 6480 1810	0.0) 1.0) NO_3-N 0.4)	0.1 Sol. 0.6 PO_4 / 0.4 PO_4	220)tot 18300)1967 11600) 0) 1920)fecal 610)coli	no data	fluoride iron manganese	none	no data
Cheyenne River at Cherry Creek 20-30 miles from Cheyenne Arm of Oahe Res.		New Station.		Went into operation July 1, 1972.				No Data	available at this time.				
1/													
1/ Detailed river mileages will be available 7/1/73													

TABLE II - AMBIENT WATER QUALITY AT NEAREST DOWNSTREAM MONITORING STATION

Data)
Listing) Listing - Minimum
Maximum
Mean

Cheyenne River Basin

	BASIC PARAMETERS - MG/L WHERE APPLICABLE												
	FLOW cfs	PH	TEMP °F	DO	TDS	TSS		TOTAL P	(FECAL) (TOTAL) BACT.	GREASE & OIL	TOXIC METALS	OTHER TOXICS	5 Day BOD
WATER SOURCES AND R.M.													
CONTROL POINT (headwaters)													
Rapid Creek below Pactola upstream from Rapid City	0 Oct 2170 May 44.4	7.2 8.6 8.1	34 61 50	8.7 12.2 10.2	202 260 227	5 41 10	0.00) NO_3 0.33) as 0.07) N	No Data	0)Fecal 6) 1)Coli. 0)	No Data	No data	No data	1.2 7.0 3.5
									22)Fecal 6)Strep				
Rapid Creek near Farmingdale - downstream from Rapid City about 20 miles	0 264C 52.4 June	7.6 8.8 8.0	34 82 63	6.4 18.7 10.8	370 935 676	10 773 136	0.45) NO_3 2.1) as 1.2) N	0.1)Sol. 1.2)PO_4 0.6)Total	900)Total 12,200)Coli 6,200)MF 2)Fecal	No data	No data	No data	3.9 30 12.2
									1200)Col 170) 10)Feca				
									380)Strep 140)				
Belle Fourche River at Wyoming-S. Dakota state line	3.4 917 125.2	6.6 8.6 7.8	No value 26) 11)^{o}C	7.5 10.6 9.4	432 2470 1271	No data	0.00) NH_3 0.75) as N 0.14) Total 0.01) 0.30) NO_2 0.17) NO_3 as N 0.00) 4.1) NO_3 0.59)	0.02 0.88 0.35	845)Total 570)Coli. 460) 11) 2000)fecal 340)	No data	0.20)Hg- 0.50)Total 0.32)ug/L	all metals; numerous pesticides However, limited number of analyses	0.8 4.2 1.5

TABLE II - AMBIENT WATER QUALITY AT NEAREST DOWNSTREAM MONITORING STATION

Cheyenne River Basin (continued) pg. 2

	BASIC PARAMETERS - MG/L UNLESS APPLICABLE												
	FLOW	PH	TEMP °F	DO	TDS	TSS		TOTAL P	(FECAL) (TOTAL) FACT.	GREASE & OIL	TOXIC METALS	OTHER TOXICS	5 Day BOD
WATER SOURCE AND R.M. 1/													
CONTROL POINT (headwaters)													
Belle Fourche River near Elm Springs - less than 30 miles from confluence with the Cheyenne River	10 2860 374	6.6 9.0 7.9	No value 29) °C 10)	4.8 12.9 9.3	512 4410 1845	No data	0.01) NH3 0.72) as N 0.25) 0.00 NO2 0.20 as N 0.07 0.11) NO3 8.4) 3.2) as N	0.0 3.3 0.6	20) 2400) Total 5600) 2) 2350) 440) Fecal	No Data	0.20) Hg-T 0.80) µg/L 0.50)	Complete list of metals & pesticides etc. refer to printout	0.2 16 3

1/ Detailed river milages will be available 7/1/73

SECTION F

TACTICAL SOLUTION

RIVER BASIN Cheyenne
WASTEWATER SOURCE Faith
RIVER MILE Beaver Ck - 58/35/30
PV/PN

Lbs.

Waste Parameter	Present Load (1)	Pres. Reduc. Req'd to Meet EPA Obj. (2)	FY 72 Commits (3) 73/74/75/76	FY 73,74 Commits (4) 73/74/75/76	Expected Incr. (5) 73/74/75/76	Total Commits (3) + (4) (6) 73/74/75/76	Total Reduction (2) + (5) (7) 73/74/75/76	PV
Flow, MGD	.058							
PH								
Temp, °F								
BOD_5	30	15.5	0/0/0/0	0/0/0/0	0/0/0/0	0/0/0/0	0/0/15.5/15.5	1
TDS	319							1
TSS	11.6							1
NH_3-N								0.5
Org-N								0.5
Total-N	12							1
Total-P	4							1
Fecal Coli.								0.5
Total Coli.								0.5
Grease & Oil								DNA
Toxic Metals								DNA
Other Toxics								DNA
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	7

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COMMENTS
Type of Facility Secondary
Design P.E.
Present P.E. 580
Effluent Requirements
1. 30 mg/l BOD = 14.5 lbs.
2. 30 mg/l SS = 14.5 lbs.
3.
Type Sewer (Combined or Separate)

Not on needs list

RIVER BASIN Cheyenne
WASTEWATER SOURCE Sturgis
RIVER MILE Bear Butte Creek 90/80/27
PV/PN 8/7

Lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73	74	75	76	FY 73,74 Commits 73	74	75	76	Expected Incr. 73	74	75	76	Total Commits (3)+(4) 73	74	75	76	Total Reduction (2)+(5) 73	74	75	76	PV
Flow, MGD	.500																						DNA
PH																							DNA
Temp, °F																							DNA
BOD_5	67	25	0	0	0	0	0	25	25	25	1	2	3	4	0	25	25	25	0	27	28	29	1
TDS	2495																						1
TSS	91	49	0	0	0	0	0	49	49	49	1	2	3	4	0	49	49	49	0	51	52	53	1
NH_3-N																							.5
Org-N																							.5
Total-N	95																						1
Total-P	32																						1
Fecal Coli.																							.5
Total Coli.																							.5
Grease & Oil																							DNA
Toxic Metals																							DNA
Other Toxics																							DNA
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				7

36

COMMENTS
Type of Facility Stabilization ponds
Design P.E. 6000
Present P.E. 4536
Effluent Requirements
1. 10 mg/l 55 = 42 lbs.
2. 10 mg/l BOD = 42 lbs.
3.
Type Sewer (Combined or (Separate))

Not on needs list

RIVER BASIN Cheyenne
WASTEWATER SOURCE Newell
RIVER MILE Dry Creek 90/98/12
PV/PN 8/7

Lbs.

Waste Parameter	Present Load (1)	Pres. Reduc. Req'd to Meet EPA Obj. (2)	FY 72 Commits (3) 73	74	75	76	FY 73,74 Commits (4) 73	74	75	76	Expected Incr. (5) 73	74	75	76	Total Commits (3) + (4) (6) 73	74	75	76	Total Reduction (2) + (5) (7) 73	74	75	76	PV
Flow, MGD	.050																						DNA
PH																							DNA
Temp, °F																							DNA
BOD_5	141	2	0/0/0/0				0/0/0/0				0				0				0/0/0/2				1
TDS	365														0				0/0/0/1				1
(assume 90% removal)	13.3%	1	0/0/0/0				0/0/0/0				0												1
TSS																							.5
NH_3-N																							.5
Org-N																							1
Total-N	14																						1
Total-P	5																						.5
Fecal Coli.																							
Total Coli.																							DNA
Grease & Oil																							DNA
Toxic Metals																							DNA
Other Toxics																							6.5

COMMENTS
Type of Facility Stabilization Lagoon
Design P.E. 790
Present P.E. 664
Effluent Requirements
1. 30 mg/l 55 = 12.5 lbs.
2. 30 mg/l BOD = 12/5 lbs.
3.
Type Sewer (Combined or (Separate)

Not on needs list

RIVER BASIN Cheyenne
WASTEWATER SOURCE Whitewood
RIVER MILE Whitewood Creek
PV/FN 8/7

90/110/16

Lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73 74 75 76	FY 73,74 Commits 73 74 75 76	Expected Incr. 73 74 75 76	Total Commits (3) + (4) 73 74 75 76	Total Reduction (2) + (5) 73 74 75 76	PV
Flow, MGD	.03							DNA
PH								DNA
Temp, °F								DNA
BOD_5	8.5	1	0/0/0/0	0/0/0/0	0/0/0/0	0/0/0/0	0/0/0/1	1
TDS	379	6						1
TSS	13.8		0/0/0/0	0/0/0/0	0/0/0/0	0/0/0/0	0/0/0/6	1
NH_3-N								.5
Org-N								.5
Total-N	14							1
Total-P	5							1
Fecal Coli.								.5
Total Coli.								.5
Grease & Oil								DNA
Toxic Metals								DNA
Other Toxics								DNA
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	7

COMMENTS
Type of Facility stabilization pond
Design P.E. flow - .08 MGD or 800
Present P.E. 689
Effluent Requirements
1. 30 mg/l = 7.5 lbs.
2. 30 mg/l = 7.5 lbs.
3.
Type Sewer (Combined or Separate)

Note: Whitewood Creek changes from Class B to Class A on Dec. 31, 1973

RIVER BASIN Cheyenne
WASTEWATER SOURCE Lead-Deadwood & Homestake
RIVER MILE Whitewood Creek 10/40
PV/PN 1/42

of Lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73 74 75 76	FY 73,74 Commits 73 74 75 76	Expected Incr. 73 74 75 76	Total Commits (3) + (4) 73 74 75 76	Total Reduction (2) + (5) 73 74 75 76	PV
Flow, MGD	3.9							DNA
PH	8.7							DNA
Temp, °F	44 W 64 S							DNA
BOD_5	1226	251	0/0/251/251	0/0/0/0	0/0/0/0	0/0/0/251	0/0/0/251	5
TDS								1
TSS	5,471,843	5,470,870	0/0/5,470,870/ 5,470,870	0/0/0/0	0/0/0/0	0/0/0/5470870	0/0/0/5,470870	3
NH3-N								3
Org-N								0.5
Total-N	213							1
Total-P	71							1
Fecal Coli.	20/100 ml.							5
Total Coli.	300/100 ml.							0.5
Grease & Oil								DNA
Toxic Metals	CN 268	268	268					5
Other Toxics	Hg 3							3
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	28

COMMENTS
Type of Facility Lead-2 Imhoff tanks & septic tanks. Deadwood-number of direct discharges
Design P.E.
Present P.E.
Effluent Requirements
1. 975 lbs. (30 mg/l) BOD) after 12/31/73
2. 975 lbs. (30 mg/l) SS)
3.
Type Sewer (Combined or Separate)

RIVER BASIN Cheyenne
WASTEWATER SOURCE Nisland
RIVER MILE Belle Fourche 90/120
PV/PN 8/7

Lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73	74	75	76	FY 73,74 Commits 73	74	75	76	Expected Incr. 73	74	75	76	Total Commits (3) + (4) 73	74	75	76	Total Reduction (2) + (5) 73	74	75	76	PV
Flow, MGD	.015																						DNA
PH																							DNA
Temp, °F																							DNA
BOD_5	(25.51)	22	0/0/0/0				0/0/22/22				0/0/0/0				0/0/22/22				0/0/22/22				1
TDS	86																						1
TSS	22	18	0/0/0/0				0/0/18/18				0/0/0/0				0/0/18/18				0/0/18/18				1
NH_3-N																							0.5
Org-N																							0.5
Total-N	3																						1
Total-P	1																						1
Fecal Coli.																							0.5
Total Coli.																							0.5
Grease & Oil																							DNA
Toxic Metals																							DNA
Other Toxics																							DNA
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				7

40-7

COMMENTS
Type of Facility Imhoff tank with open sludge drying beds
Design P.E. 210
Present P.E. 57
Effluent Requirements
1. 30 mg/l 55 = 4 lbs.
2. 30 mg/l BOD = 4 lbs.
3.
Type Sewer (Combined or (Separate))

Proposed system - 1.25 acre stabilization pond in Interim Plan

RIVER BASIN Cheyenne
WASTEWATER SOURCE USDI Spearfish National Fish Hatchery
RIVER MILE Separfish Creek
PV/PN 10/6

Lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73	74	75	76	FY 73,74 Commits 73	74	75	76	Expected Incr. 73	74	75	76	Total Commits (3) + (4) 73	74	75	76	Total Reduction (2) + (5) 73	74	75	76	PV
Flow, MGD	1600 GPD																						DNA
PH	8.7																						DNA
Temp, °F	37 W 50 S																						DNA
BOD_5	95.2	0												0									1
TDS																							0.5
TSS	329	0												0									1
NH_3-N	8.6																						0.5
Org-N																							0.5
Total-N																							0.5
Total-P	12																						1
Fecal Coli.																							0.5
Total Coli.																							0.5
Grease & Oil																							DNA
Toxic Metals																							DNA
Other Toxics																							DNA
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				6

(1) Lat 44-28-51
Long 103-51-40

COMMENTS
solids in water are unused feed & fish fecal

Type of Facility
Design P.E.
Present P.E.
Effluent Requirements
1.
2.
3.
Type Sewer (Combined or Separate)

RIVER BASIN Cheyenne
WASTEWATER SOURCE Spearfish
RIVER MILE Spearfish Creek 90/148/10/10
PV/PN 8/7

Lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73	74	75	76	FY 73,74 Commits 73	74	75	76	Expected Incr. 73	74	75	76	Total Commits (3) + (4) 73	74	75	76	Total Reduction (2) + (5) 73	74	75	76	PV
Flow, MGD	.75 MGD																						DNA
PH																							DNA
Temp, °F																							DNA
BOD_5	313	250	250	252	254	256	0	0	0	0	0	2	4	6									1
TDS	2563																						1
TSS	250	187	187	189	191	193	0	0	0	0	0	2	4	6									1
NH_3-N																							0.5
Org-N																							0.5
Total-N	97																						1
Total-P	33																						1
Fecal Coli.																							0.5
Total Coli.																							0.5
Grease & Oil																							DNA
Toxic Metals																							DNA
Other Toxics																							DNA
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				7

42

COMMENTS
Type of Facility Imhoff tank, trickling filter, final clarifier, open sludge drying beds
Design P.E. 6200 (1990)
Present P.E. 4661
Effluent Requirements
1. 10 mg/l SS = 63 lbs.
2. 10 mg/l BOD = 63 lbs.
3.
Type Sewer (Combined or Separate)

Proposed project - 105 Ac. stabilization pond This project is to include Spearfish Valley Sanitary Dist. (1910 people)
Presently under construction

RIVER BASIN Cheyenne
WASTEWATER SOURCE Bell Fourche
RIVER MILE Belle Fourche 90/150
PV/PN 8/7

lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73	74	75	76	FY 73 74 Commits 73	74	75	76	Expected Incr. 73	74	75	76	Total Commits (3) + (4) 73	74	75	76	Total Reduction (2) + (5) 73	74	75	76	PV
Flow, MGD	300																						DNA
PH																							DNA
Temp, °F																							DNA
BOD_5	70	0	0								0/0/0/0				0/0/0/0				0/0/0/0				1
TDS	2330																						1
TSS	80	0	0				0				0/0/0/0				0/0/0/0				0/0/0/0				1
NH_3-N																							0.5
Org-N																							0.5
Total-N	88																						1
Total-P	30																						1
Fecal Coli.																							0.5
Total Coli.																							0.5
Grease & Oil																							DNA
Toxic Metals																							DNA
Other Toxics																							DNA
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				7

COMMENTS
Type of Facility stabilization ponds
Design P.E. 4000
Present P.E. 4236
Effluent Requirements
1. 30 mg/l SS = 75 lbs.
2. 30 mg/l BOD = 75 lbs.
3.
Type Sewer (Combined or Separate)

Not on needs list

RIVER BASIN Cheyenne
WASTEWATER SOURCE Gillette, Wyoming
RIVER MILE 316/30
PV/PN

Lbs.

PV

Waste Parameter	Present Load (1)	Pres. Reduc. Req'd to Meet EPA Obj. (2)	FY 72 Commits (3) 73	74	75	76	FY 73,74 Commits (4) 73	74	75	76	Expected Incr. (5) 73	74	75	76	Total Commits (3) + (4) (6) 73	74	75	76	Total Reduction (2) + (5) (7) 73	74	75	76
Flow, MGD	NO DISCHARGE TO A WATERCOURSE																					
PH																						
Temp, °F																						
BOD_5																						
TDS																						
TSS																						
NH_3-N																						
Org-N																						
Total-N																						
Total-P																						
Fecal Coli.																						
Total Coli.																						
Grease & Oil																						
Toxic Metals																						
Other Toxics																						

(1) (2) (3) (4) (5) (6) (7)

COMMENTS
Type of Facility No treatment provided (discharged to land, Stone Pile Creek (dry))
Design P.E.
Present P.E. 3580 Appl. in June 71 - Bids are to be let soon
Effluent Requirements Proposed Facility is an activated sludge plant w/polishing pond discharge will go to agricultural irrigation - no receiving water course
1.
2.
3.
Type Sewer (Combined or (Separate))

RIVER BASIN Cheyenne
WASTEWATER SOURCE Ellsworth AFB - Rapid City
RIVER MILE Box Elder Ck. 152/32
PV/PN 4/11

Lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73	74	75	76	FY 73 74 Commits 73	74	75	76	Expected Incr. 73	74	75	76	Total Commit (3) + (4) 73	74	75	76	Total Reduction (2) + (5) 73	74	75	76	PV
Flow, MGD	1.35																						
PH	6.2																						
Temp, °F																							
BOD_5	20 mg/l 226 lbs.	0		0			0				0					0				0			1
TDS	5500 lbs.																						1
TSS	11 mg/l 124	0		0			0				0					0				0			1
NH_3-N																							0.5
Org-N																							0.5
Total-N	210 lbs.																						3
Total-P	70 lbs.																						3
Fecal Coli.																							0.5
Total Coli.																							0.5
Grease & Oil																							DNA
Toxic Metals																							DNA
Other Toxics																							DNA
	(1)	(2)		(3)			(4)				(5)				(6)				(7)				11

45

COMMENTS
Type of Facility High rate trickling filter with Anaerobic sludge digestion
Design ~~FXE~~.flow 1.75 MGD
Present P.E. 10,000
Effluent Requirements
1. 30 mg/l BOD=338 lbs.
2. 30 mg/l 55 = 338 lbs.
3.
Type Sewer (Combined or Separate)

Not on needs list
Some improper industrial waste disposal taking place

RIVER BASIN Cheyenne
WASTEWATER SOURCE USAF Ellsworth AFB
RIVER MILE Box Elder, Cr.
PV/PN 9/6.5

Lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73	74	75	76	FY 73 74 Commits 73	74	75	76	Expected Incr. 73	74	75	76	Total Commits (3) + (4) 73	74	75	76	Total Reduction (2) + (5) 73	74	75	76	PV
Flow, MGD	0.066																						1
PH	7.2 - 7.7																						1
Temp, °F	varies w/ storm water																						1
BOD_5	5.5	0																					0.5
TDS	335																						0.5
TSS	28	12	0/0/0/0				0/12/12/12				0				0/12/12/12				0/12/12/12				0.5
NH3-N																							0.5
Org-N																							0.5
Total-N																							DNA
Total-P	0.1																						DNA
Fecal Coli.																							DNA
Total Coli.																							0.5
Grease & Oil																							1
Toxic Metals (CN)	.01 mg/l of CN																						DNA
Other Toxics																							6.5
	(1)		(2)				(3)				(4)				(5)				(6)				(7)

(1) Lat 44-07-40 (2)
Long 103-05-52

COMMENTS storm run-off from aircraft dock area discharge is computed on rainfall & paved dock area

Type of Facility
Design P.E.
Present P.E.
Effluent Requirements
1. 30 mg/l
2.
3.
Type Sewer (Combined or Separate)

RIVER BASIN Cheyenne
WASTEWATER SOURCE S. Dakota Cement Plant, Rapid City
RIVER MILE Unnamed to Rapid Cr.
PV/PN 7/8.5

Lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73 74 75 76	FY 73,74 Commits 73 74 75 76	Expected Incr. 73 74 75 76	Total Commits (3) + (4) 73 74 75 76	Total Reduction (2) + (5) 73 74 75 76	PV
Flow, MGD	0.1							
PH	8.5							
Temp, °F	65W 70S							
BOD_5	3.1	3.1	0	0/3/3/3	0/0/0/0	0/3.1/3.1/3.1	0/3.1/3.1/3.1	1
TDS	257							1
TSS	19	19	0	0/19/19/19	0/0/0/0	0/19/19/19	0/19/19/19	1
NH_3-N								DNA
Org-N								DNA
Total-N								DNA
Total-P								DNA
Fecal Coli.	20,000/100	20,000/100	0/20,000/0/0	0/0/0/0	0/0/0/0	0/20M/100/20M/100/20M/100	0/20M/100/20M/100	5
Total Coli.	21,000/100	21/000/100	21,000/100 21,000/100 21,000/100	0/0/0/0	0/0/0/0	0/21M/100/21M/100/21,000/100	21M/100/21M/100/21M/100	0.5
Grease & Oil								DNA
Toxic Metals								DNA
Other Toxics								DNA
	( )Lat-44-05-72 Long 103-16-00' (2)		(3)	(4)	(5)	(6)	(7)	8.5

COMMENTS
Type of Facility septic tank overflow and resulting process water from portland cement wet process
Design P.E.
Present P.E.
Effluent Requirements
1.
2.
3.
Type Sewer (Combined or Separate)

47<

RIVER BASIN Cheyenne
WASTEWATER SOURCE Rapid City
RIVER MILE Rapid Creek 166/43
P.E./PR 3/13

Lbs.

Waste Parameter	Present Load (1)	Pres. Reduc. Req'd to Meet EPA Obj. (2)	FY 72 Commits (3) 73	74	75	76	FY 73 74 Commits (4) 73	74	75	76	Expected Incr. (5) 73	74	75	76	Total Commits (3) + (4) (6) 73	74	75	76	Total Reduction (2) + (5) (7) 73	74	75	76	PV
Flow, MGD	4.0																						DNA
PH																							DNA
Temp, °F																							DNA
BOD_5	767	0	23/46/70/95				0/0/0/0				23/46/70/95				23/46/70/95				23/46/70/95				3
TDS	23,265																						1
TSS	846 lb.	0	25/51/79/107				0/0/0/0				25/51/79/107				25/51/79/107				25/51/79/107				1
NH_3-N																							0.5
Org-N																							0.5
Total-N	888 lbs.																						3
Total-P	296 lbs.																						3
Fecal Coli.																							0.5
Total Coli.																							0.5
Grease & Oil																							DNA
Toxic Metals																							DNA
Other Toxics																							DNA
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				13

COMMENTS
Type of Facility-High rate trickling filter
Design P.E. design MGD 13.500
Present P.E. 42,300
Effluent Requirements
1. 30 mg/l BOD = 1001 lbs.
2. 30 mg/l 55 = 1001 lbs.
3.
Type Sewer (Combined or Separate)

Not on needs list

RIVER BASIN Cheyenne
WASTEWATER SOURCE Birdsall Sand & Gravel - Oral Sand Plant, Rapid City
RIVER MILE Cheyenne RM 227
PV/PN 12/3

Lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73 74 75 76	FY 73,74 Commits 73 74 75 76	Expected Incr. 73 74 75 76	Total Commits (3) + (4) 73 74 75 76	Total Reduction (2) + (5) 73 74 75 76	PV
Flow, MGD	0.4							
PH	7.6							
Temp, °F	72s ice W							
BOD_5	11.2							1
TDS	781							1
TSS	6242	6,142	0/0/0/0	0/6,142/6,142/6,142	0/0/0/0	0/6,142/6,142/6,142	0/6,142/6,142/6,142	1
NH_3-N								DNA
Org-N								DNA
Total-N								DNA
Total-P								DNA
Fecal Coli.								DNA
Total Coli.								DNA
Grease & Oil								DNA
Toxic Metals								DNA
Other Toxics								DNA
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	3

(1) Lat 43-24-52
Long 103-15-57

COMMENTS
Type of Facility Sand washing, approx 7 months/year
Design P.E.
Present P.E.
Effluent Requirements
1. 30 mg/l 100 lb.
2.
3.
Type Sewer (Combined or Separate)

RIVER BASIN Cheyenne
WASTEWATER SOURCE Dakota Block Co. Rapid City
RIVER MILE Headwater To Gary's Pond
PV/PN 12/3

Lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73	74	75	76	FY 73 74 Commits 73	74	75	76	Expected Incr. 73	74	75	76	Total Commits (3) + (4) 73	74	75	76	Total Reduction (2) + (5) 73	74	75	76	PV
Flow, MGD	900 GPD																						
PH	0.5																						
Temp, °F	212																						
BOD_5	.007																						1
TDS	6	0									0												1
TSS	.06																						1
NH_3-N																							DNA
Org-N																							DNA
Total-N																							DNA
Total-P	0																						DNA
Fecal Coli.																							DNA
Total Coli.																							DNA
Grease & Oil																							DNA
Toxic Metals																							DNA
Other Toxics																							DNA
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				3

50-

COMMENTS lat 44-0-35 long 103-10-39
Type of Facility concrete Masonry Products - discharge is condensate from boilers
Design P.E.
Present P.E.
Effluent Requirements
1.
2.
3.
Type Sewer (Combined or Separate)

RIVER BASIN Cheyenne
WASTEWATER SOURCE Pete Lien & Sons Inc. Quarry & Lime Plant, Rapid City Lbs.
RIVER MILE Intermittent Stream - no name
PV/PN 13/2.5

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73	74	75	76	FY 73,74 Commits 73	74	75	76	Expected Incr. 73	74	75	76	Total Commits (3) + (4) 73	74	75	76	Total Reduction (2) + (5) 73	74	75	76	PV
Flow, MGD	0.1																						
PH	7.71																						
Temp, °F	53.5																						
BOD_5	0.33																						1
TDS	88	0									0												1
TSS	0																						0.5
NH_3-N																							DNA
Org-N																							DNA
Total-N																							DNA
Total-P	0.16																						DNA
Fecal Coli.																							DNA
Total Coli.																							DNA
Crease & Oil																							DNA
Toxic Metals																							DNA
Other Toxics																							2.5
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				

Lat 44-06-49 Long 103-16-56

COMMENTS
Type of Facility Limestone calcining producing lime products, water used to cool air-fuel distributors
Design P.E.
Present P.E.
Effluent Requirements
1.
2.
3.
Type Sewer (Combined or Separate)

RIVER BASIN Cheyenne
WASTEWATER SOURCE Air products & Chemicals, Rapid City
RIVER MILE Intermittent stream to Rapid Creek
PV/PN 14/1

Lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73	74	75	76	FY 73.74 Commits 73	74	75	76	Expected Incr. 73	74	75	76	Total Commits (3) + (4) 73	74	75	76	Total Reduction (2) + (5) 73	74	75	76	PV
Flow, MGD	.00945																						
PH	7																						
Temp, °F	60 w 65 s																						
BOD_5	0										0												DNA
TDS	28																						1
TSS																							DNA
NH_3-N																							DNA
Org-N																							DNA
Total-N																							DNA
Total-P	.0079																						DNA
Fecal Coli.																							DNA
Total Coli.																							DNA
Grease & Oil																							DNA
Toxic Metals																							DNA
Other Toxics																							DNA
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				1

52<

COMMENTS Lat 44-03-20 Long 103-11-30

Type of Facility cooling water used for compressors (industrial O_2)
Design P.E.
Present P.E.
Effluent Requirements
1.
2.
3.
Type Sewer (Combined or Separate)

RIVER BASIN Cheyenne
WASTEWATER SOURCE Hill City
RIVER MILE Spring Creek 171/60
PV/FR 2/15.5

Lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73	74	75	76	FY 73,74 Commits 73	74	75	76	Expected Incr. 73	74	75	76	Total Commits (3) + (4) 73	74	75	76	Total Reduction (2) + (5) 73	74	75	76	PV
Flow, MGD	.06																						DNA
PH																							DNA
Temp, °F																							DNA
BOD_5	50lbs.	45.1lbs.	45/45/46/47				0/0/0/0				0/0.5/1/1.5				45/45/46/47				45/45/46/47				5
TDS	344 lb.																						1
TSS	27.5 lbs.	23 lb.	23/23/23/24				0/0/0/0				0/.2/.4/.6				23/23/23/24				23/23/23/24				1
Nh3-N																							0.5
Org-N																							0.5
Total-N	13lb.																						1
Total-P	4 lb.																						1
Fecal Coli.																							5
Total Coli.																							0.5
Grease & Oil																							DNA
Toxic Metals																							DNA
Other Toxics																							DNA
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				15.5

53

COMMENTS
Type of Facility Trickling Filters (standard rate)
Design P.E. 900 (tourists)
Present P.E. 625 (tourists)
Effluent Requirements
1. 10 mg/l SS = 5 lb.
2. 10 mg/l BOD_5 = 5 lb.
3.
Type Sewer (Combined or Separate)

Construction has just been completed at Hill City o
Outfall line, Stabilization pond and polishing pond

RIVER BASIN Cheyenne
WASTEWATER SOURCE Hermosa
RIVER MILE Battle Creek 190/24
PV/PR 8/7

Lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73	74	75	76	FY 73,74 Commits 73	74	75	76	Expected Incr. 73	74	75	76	Total Commits (3) + (4) 73	74	75	76	Total Reduction (2) + (5) 73	74	75	76	PV
Flow, MGD	0.0125 (100gal/cap/day)																						
PH																							
Temp, °F																							
BOD_5	2	0	0				0				0				0				0				1
TDS	69																						1
TSS	2.5																						1
Nng-N																							0.5
Org-N																							0.5
Total-N	2.6																						1
Total-P	1																						1
Fecal Coli.																							0.5
Total Coli.																							0.5
Grease & Oil																							DNA
Toxic Metals																							DNA
Other Toxics																							DNA
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				7

54

COMMENTS
Type of Facility Stabilization lagoon
Design P.E. Design MGD = .028
Present P.E. 125
Effluent Requirements
1. 30 mg/l BOD = 316
2. 30 mg/l SS = 316
3.
Type Sewer (Combined or Separate)

Not on needs list

RIVER BASIN Cheyenne
WASTEWATER SOURCE Custer
RIVER MILE French Creek 195/55
PE/PR 5/9.5

Lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73	74	75	76	FY 73,74 Commits 73	74	75	76	Expected Incr. 73	74	75	76	Total Commit (3) + (4) 73	74	75	76	Total Reduction (2) + (5) 73	74	75	76	PV
	Max.490										Assume 3												
Flow, MGD	Ave .389 Min .173																						
	Max 7.8										162												
PH	Min 7.6										x390												
Temp, °F																							
BOD_5	162	130	130/135/140/145				0	0	0	0	0/5/10/15				130/135/140/145				130/135/140/145				1
TDS	1788																						1
TSS	144	82	82/85/88/91				0	0	0	0	0/3/6/9				82/85/88/91				82/85/88/91				0.5
NH_3-N																							0.5
Org-N																							
Total-N	High 68																						
Total-P	23																						1
Fecal Coli.	16,425/100ml																						1
Total Coli.																							3
Grease & Oil																							0.5
Toxic Metals																							DNA
Other Toxics																							DNA
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				9.5

55A

COMMENTS
Type of Facility-Trickling Filter
Design P.E. 9250 (tourists)
Present P.E. 3250
Effluent Requirements
1. 10 mg/l BOD=32 lbs.
2. 10 mg/l SS 32 lbs.
3.
Type Sewer (Combined or (Separate)

Grant offer out 3-31-71 for upgrading existing system plus polishing ponds. Under construction

RIVER BASIN Cheyenne
WASTEWATER SOURCE Hot Springs
RIVER MILE Fall River 236/6
PV/PN 8/7

Lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73	74	75	76	FY 73,74 Commits 73	74	75	76	Expected Incr. 73	74	75	76	Total Commits (3) + (4) 73	74	75	76	Total Reduction (2) + (5) 73	74	75	76	PV
Flow, MGD	.7Ave																						DNA
PH																							DNA
Temp, °F																							DNA
BOD_5	117	59					0/0/59/59				0/0/0/0				0/0/59/59				0/0/59/59				1
TDS	2439																						1
TSS	178	120					0/0/120/120				0/0/0/0				0/0/120/120				0/0/120/120				1
Nh3-N																							0.5
Org-N	High																						0.5
Total-N	92																						1
Total-P	31																						1
Fecal Coli.																							0.5
Total Coli.																							0.5
Grease & Oil																							DNA
Toxic Metals																							DNA
Other Toxics																							DNA
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				7

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COMMENTS
Type of Facility Grit chamber, comminuter, primary set. tank, trickling filter, final set. tank, digesters
Design P.E. 5000
Present P.E. 4434
Effluent Requirements
1. 10 mg/l BOD = 58 lbs.
2. 10 mg/l SS = 58 lbs.
3.
Type Sewer (Combined or Separate)

Proposed 70 acre stabilization pond - one 40 and one 30 - discharge to Cheyenne River
No application yet

TABLE I

STATE WY Cheyenne
NAME OF SOURCE Mines Dev. Inc. @ Edgemont
RIVER MILE Cheyenne & Cottonwood Cr. 205
6/9

Waste Parameter	Present Load	Pres. Reduc. req'd to Meet Eff. Proj.	FY 72 Commits 73	74	75	76	FY 73, 74 Commits 73	74	75	76	Expected Incr. 73	74	75	76	Total Commits (3) + (4) 73	74	75	76	Total Reduction (2) + (5) 73	74	75	76
Flow, MGD	Seepage																					
PH	As far as Cottonwood Creek is concerned, the seepage produces a significant pH drop: On the order of 7.0 DO 7.3 upstream - 6.3 to 6.4 near the confluence. Eliminate seepage.																					
Temp, °F																						
BOD_5																						
TDS	Seepage also increases the dissolved solids level in Cottonwood Creek.																					
TSS																						
NH_3-N																						
Org-N																						
Total-N																						
Total-P																						
Fecal Coli.																						
Total Coli.																						
Grease & Oil																						
Toxic Metals	3.0 ug/Hg on Cheyenne from 2.1 ug/Hg upstream, however, this is not to be attributed to mill seepage. The difference is of natural origin. Iron and vanadium concentrations are increased in the creek as the result of seepage.																					3
Other Toxics	Increased concentrations of dissolved radium-226 and uranium in Cottonwood Creek; no significant increases in the dissolved radioactivity levels in Cheyenne River. Sealing ponds will eliminate the losses of radioactive materials to the water environment.																					5
	(1)	(2)	(3)				(4)				(5)				(6)				(7)			9

COMMENTS:
Type of Facility
Design P.E.
Present P.E.
Effluent Requirements
1.
2.
3.
Type Sewer (Combined or Separate)

RIVER BASIN Cheyenne
WASTEWATER SOURCE Upton, Wyo.
RIVER MILE Beaver Ck. 298/71
PW/PM 8/7

Lbs.

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits				FY 73 74 Commits				Expected Incr.				Total Commits (3) + ( )				Total Reduction (2) + (5)				PV
			73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	73	74	75	76	
Flow, MGD 100gped	.12																						
PH																							
Temp, °F																							
BOD_5	24	0	0/0/0/0				0/0/0/0				0/0/0/0				0/0/0/0				0/0/0/0				1
TDS	660																						1
TSS	24	0	0/0/0/0				0/0/0/0				0/0/0/0				0/0/0/0				0/0/0/0				1
NH_3-N																							0.5
Org-N																							0.5
Total-N	25																						1
Total-P	8																						1
Fecal Coli.																							0.5
Total Coli.																							0.5
Grease & Oil																							DNA
Toxic Metals																							DNA
Other Toxics																							DNA
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				7

586

COMMENTS
Type of Facility Stabilization Lagoons
Design P.E.
Present P.E. 1200
Effluent Requirements
1.
2.
3.
Type Sewer (Combined or Separate)

Cheyenne

TABLE I

Kiesling Oil Co. Osage, Wyo.

Mush Creek

11/4.2

Waste Parameter	Present Load	Pres. Reduc. q'd to Meet Eff. Obj.	FY 72 Commits 73	74	75	76	FY 73, 74 Commits 73	74	75	76	Expected Incr. 73	74	75	76	Total Commits (3) + (4) 73	74	75	76	Total Reduction (2) + (5) 73	74	75	76	PV
Flow, MGD	.120mGPY																						
PH	8.5																						
Temp, °F																							
BOD_5	10	10	0/0/0/0				0/10/10/10				0/0/0/0				0/10/10/10				0/10/10/10				DNA
TDS																							1
TSS																							0.5
NH_3-N																							DNA
Org-N																							1
Total-N																							1
Total-P																							DNA
Fecal Coli.																							DNA
Total Coli.																							DNA
Grease & Oil																							1
Toxic Metals																							DNA
Other Toxics																							DNA
	(1)	(2)	(3)				(4)				(5)				(6)				(7)				4.5

COMMENTS: Lat. 43-48-05 Long. 104-26-30

Type of Facility - Discharge occurs 2-3 times/year

Design P.E.

Present P.E.

Effluent Requirements

1.

2.

3.

Type Sewer (Combined or Separate)

RIVER BASIN Cheyenne
WASTEWATER SOURCE Keystone - Mt. Rushmore Sanitary Dist.
RIVER MILE Battle Creek 190/40
PV/PN

Lbs.

PV

Waste Parameter	Present Load	Pres. Reduc. Req'd to Meet EPA Obj.	FY 72 Commits 73	74	75	76	FY 73,74 Commits 73	74	75	76	Expected Incr. 73	74	75	76	Total Commit (3) + (4) 73	74	75	76	Total Reduction (2) + (5) 73	74	75	76
Flow, MGD																						
PH	NO DIRECT DISCHARGE																					
Temp, °F																						
BOD_5																						
TDS																						
TSS																						
NH_3-N																						
Org-N																						
Total-N																						
Total-P																						
Fecal Coli.																						
Total Coli.																						
Grease & Oil																						
Toxic Metals																						
Other Toxics																						
	(1)	(2)	(3)				(4)				(5)				(6)				(7)			

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COMMENTS
Type of Facility unsewered privies, cesspools, septic tanks with soil absorption systems
Design P.E. 2880 (1990 w/tourists)
Present P.E. 1840 (tourists)
Effluent Requirements
1. 10 mg/l BOD
2. 10 mg/l SS
3.
Type Sewer (Combined or Separate)

Proposed system - 2 phases Phase I - treatment facilities, aerated pond followed by a polishing pond (5.5 acres)

Phase II - complete collection system at Keystone

SECTION F

TACTICAL SOLLUTIONS

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

Situation Analysis	Recommended Actions By Sub Task & Organization Responsibility	Dates Initiation	Dates Completion	Program Element	Manpower Required (Prof.- Man - Mos.) FY 73	FY 74	FY 75	FY 76
On a "worst" condition basis, violations of Water Quality Standards have occurred in the Belle Fourche River below Whitewood Creek and in the Cheyenne River below Wasta. Although the basin has little in the way of heavy industry and a low population density, it contains widespread water pollution problems as a result of three major factors. First, tourist traffic is substantial in population centers located in relatively small areas that have poorly operated facilities. Second, process wastes and minetailings from the Homestake Mining Company and radium nuclides introduced by seepage from Mines Development, Inc. act as conservative pollutants for several hundred miles downstream. Third nonpoint sources as yet unquantified create sediment and solids problems. Collectively, these discharges threaten the continued use of Basin Surface waters for water supply, agriculture, and recreation. An Enforcement Conference was held to consider the occurrence, distribution, and significance of cyanide, mercury, and other metals pollution in western South Dakota. The conferees made several recommendations and approved an implementation schedule for the abatement of these pollutants. These recommendations will be discussed later in the situation analysis.	1. Encourage and assist States to enforce WQ standards.	Continuing		3B1123	.35	0.1	0.1	
	2. Assure proper completion of construction of municipal facilities now underway and help municipalities needing wastewater treatment facilities to finance construction of these facilities through our construction grant program.	Ongoing	12/31/75	2B8162 2B8316 2B3149 2B6116	2.3 0.9 1.5 0.1	4.1 0.9 0.4	2.10 0.4	0.8 0.1
	3. Assist the States in developing a comprehensive monitoring program for waters in the basin.	Continuing		2B3149 2B2147	0.2 0.25	0.1 0.25	0.1	0.1
	4. Obtain letters of commitment from industrial dischargers to reduce the discharge of pollutants.	Ongoing	12/1/74	3R2124 2B1143 2B6116	6.0 0.8 0.2	6.0 0.6	1.4	
	5. Assist state in conducting O&M studies on all WWTP in Basin	3/73	continuing	2B8163	1.5	1.5	1.0	
	6. Assist states with operator training program for all WWTP in Basin.	Continuing		2B7160	0.9	1.5	1.5	
	7. Carry out recommendations of the enforcement conference.	Continuing		3B1123	5.0	4.5		
	8. Continue with Black Hills 3(c) Grant	Ongoing	10/1/73	2B3149 2B1143	1.5 0.4	0.5 0.4		
	9. Review of environmental statements of municipal facilities and 3(c) Grant.	1/15/73	continuing	2B6117	5.6	1.8		
	* These actions will be changed to permit actions immediately under the new legislation as soon as guidelines are available.							

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TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

Situation Analysis	Recommended Actions By Sub Task & Organization Responsibility	Dates		Program Element	Manpower Required (Prof.- Man - Mos.)			
		Initiation	Completion		FY 73	FY 74	FY 75	FY 76
Whitewood Creek is presently classified as a Class "B" stream or one that has no designated beneficial use. The State has scheduled a change in classification of this Creek to Class "A" after 12/31/73.	10. Initiate an aggressive public information campaign to create public awareness and support for programs designed to abate and control pollution in the Cheyenne River Basin.	1/15/73	Continuing	5T2215	2.0	1.0	0.5	0.25
After the disastrous floods of June 9-10, 1972 in the Black Hills area, Rapid City is considering rezoning the flood plain area through the city for recreational purposes. This may mean reclassifying Rapid Creek through the city from limited contact recreation to immersion sports.	11. Continue participation on flood recovery task force.	ongoing	indefinite	2B3149 2B3150	1.2	0.5		
	12. Conduct inventory of all public water supplies including information concerning population served, treatment, production, and capacity.	11/72	6/73	2C5226	2.0			
	13. Monitoring The Cheyenne Basin Accomplishment Plan.	ongoing	continuing	2B3149	1.0	1.0	0.8	0.5

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TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

Situation Analysis	Recommended Actions By Sub Task & Organization Responsibility	Dates Initiation	Dates Completion	Program Element	Manpower Required (Prof.- Man - Mos.) FY 73	FY 74	FY 75	FY 76
1. MUNICIPAL FACILITIES								
Many of the water quality problems in the basin result from improperly treated municipal and industrial wastes. To maintain or enhance the water quality in the basin, the strategy is to construct eight municipal wastewater treatment facilities and one Federal facility. These facilities will reduce the average daily BOD_5 and TSS loads by 903 and 5,477,645 pounds respectively by FY-76. However, to insure that these reduction goals are realized, a strong O&M program must be developed and maintained.	Regionalization was considered but was generally found to be infeasible with the exception of the Lead-Deadwood Sanitary District.							
LEAD-DEADWOOD SANITARY DISTRICT								
Whitewood Creek, the Belle Fourche River and the Cheyenne River are grossly polluted by mine tailings and process wastes from the Homestake Mining Company and municipal wastes from the cities of Lead & Deadwood. The Lead-Deadwood Sanitary District organized to develop a sewerage system to treat municipal and industrial wastes, recommended the construction of a waste stabilization pond which would provide for adequate treatment of the combined wastes as well as storage of tailings from the gold-mining operations. An application for $1.79 million in Federal assistance was filed with EPA on 4/12/71. A draft ES was prepared and a public hearing was held at Deadwood 12/21-22/71.	1. Work out agreement with BuRec to serve as a consultant to EPA on the structural design of the tailings pond.	11/1/72	12/1/72	2B8162	0.2			
	2. Complete plans & specifications.		8/15/73	2B8162		0.2		
	3. State & Federal approval of plans & specifications.		9/30/73	State 2B8162		0.1		
	4. Award contract		3/1/74	2B8316		0.1		
	5. Complete construction & place project in operation.		11/1/75	2B8162 2B8316		1.5 0.1	1.5 0.1	0.8 0.1
	6. Assist the State in establishing monitoring stations above and below the WWTP for monitoring of instream water quality. Also monitor quality of effluent.	10/1/74	Continuing	2B2147			.05	0.05

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

Situation Analysis	Recommended Actions By Sub Task & Organization Responsibility	Dates Initiation	Dates Completion	Program Element	Manpower Required (Prof.- Man - Mos.) FY 73	FY 74	FY 75	FY 76
A final statement was transmitted 4/15/72 to CEQ and interested parties. Grant offer was made 4/24/72. Please note that this schedule is significantly different from the approved schedule of the Enforcement Conference. This is because of the delay required to fully evaluate environmental considerations. Waste load reductions expected are 251 lb/da BOD_5 and 5,470,870 lb/da TSS.	7. Prepare O&M manual, assist state in monitoring the operation and management of the WWTP. Operator training.	10/1/74	Continuing	2B8163		0.2	0.2	0.2
HILL CITY WWTP								
Existing facility causing public health hazard to Spring Creek concerning swimming and fishing. New facility is now under construction. Waste load reductions expected are 35 lb/day BOD_5 and 28 lb/da TSS.	1. Complete construction of treatment facility now underway.	12/70	10/31/72	2B8162 2B8316	.2 .1			
	2. Assist state in establishing monitoring stations on Spring Creek above and below Hill City WWTP. Also test quality of effluent discharged after new treatment facility begins operation.			2B2147	.05	.05	.0	
	3. Prepare O&M manual, assist state in monitoring the O&M of the WWTP, operator training.			2B8163	0.2			
CUSTER								
The existing project is causing a public health hazard and pollution problems on French Creek in regards to fishlife and recreation. Grant offer made for construction of new treatment facilities plus upgrading of present facilities on 3-31-71. Presently under construction. Expected waste load reductions are 90 lb/da BOD_5 and 79 lb/da TSS.	1. Complete construction of facility	12/70	10/1/73	2B8162 2B8316	.4 .1	.2 .1		
	2. Assist the city through the State in establishing monitoring a station on French Creek below Custer - also test quality of effluent discharged after new treatment facility begins operation.	10/73	Continuing	2B2147		.05	.05	
	3. O&M, manual and training.				0.2	0.1		

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

Situation Analysis	Recommended Actions By Sub Task & Organization Responsibility	Dates Initiation	Dates Completion	Program Element	Manpower Required (Prof.- Man - Mos.) FY 73	FY 74	FY 75	FY 76
NISLAND								
Discharging high BOD & TSS loads to the Belle Fourche River. Present system consist of an Imhoff tank with open sludge drying beds. Interim plan identified a need for a 1.25 acre stabilization pond. Town given a deadline by state of 1/72 for completion of adequate facilities. At present progress is very slow. Expected waste load reductions are 22 lb/da BOD_5 and 18 lb/da TSS.	1. Work with City and State to influence the City to apply for a construction grant for FY-74.	1/15/73		2B8162	.1			
	2. Award grant	4/1/73		2B8316 2B3149	.2 .5			
	3. Review plans & specifications environmental statement, complete project.		10/74	2B8316 2B8162 2B6117	.1 .4 1.8	.1 .4		
	4. Prepare O&M manual. Assist state in monitoring O&M of the WWTP. Operator training		10/74	2B8163	0.2	0.1		
	5. If no interest is shown in abating pollution after completion of Task 1, encourage state to proceed with enforcement action.	3/15/73	Indefinite	3B1123	0.25			
STURGIS								
Portions of the collection system is old and in a poor state of repair. The interceptor line to the treatment facility is currently overloaded primarily because of groundwater infiltration into the collection system. As a result of the hydraulic ov erload, high BOD_5 and TSS loads are discharged. Replacement of several collection lines will relieve the overload on the interceptor to a certain extent. Expected waste load reductions are 12 lb/da BOD_5 and 25 lb/da TSS.	1. Work with State and City to encourage repair and upgrading of collection system.	1/15/74		2B8162		0.05		
	2. Contact state on Sturgis applying for Grant if necessary after considering improvements from collection system repair.	3/15/74		2B8162		0.05		
	3. Preapplication Conference.	4/15/74		2B8162		0.10		
	4. Application review and process grant award.	5/15/74		2B8162 2B8316 2B3149		0.1 0.10 0.4		

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

Situation Analysis	Recommended Actions By Sub Task & Organization Responsibility	Dates Initiation	Dates Completion	Program Element	Manpower Required (Prof.- Man - Mos.) FY 73	FY 74	FY 75	FY 76
Sturgis (continued)	5. Review specifications and environmental statement, begin construction.	6/1/74		2B8162 2B8316 2B6117		0.10 0.10 1.8	0.1 0.1	
	6. Complete construction and final inspection.		12/1/74	2B8162		.2	.1	
	7. Assist in the upgrading of O&M practices.	-Continuing		2B8163		0.1	0.1	0. 1
RAPID CITY								
There is presently no problem with the Rapid City WWTP. Plant has sufficient capacity for the near future, however, since Rapid City is the largest city in the area and discharges a relatively large effluent into a small stream, operation and maintenance practices should be monitored.	1. Monitor O&M practices of WWTP to insure operation at high efficiency.	Continuing		2B8163	0.1	0.1	0.1	0.1
	2. Assist the city and state in establishing monitoring stations above and below WWTP outfall. Monitor	6/1/73	Continuing	2B2147		0.05	0.05	0.05
HOT SPRINGS								
Present facility does not adequately treat the city's wastes. Effluent discharge to Fall River is creating a hazard to public health. The city is not presently totally sewered for collection of wastes. Expected waste load reductions are 59 lb/da BOD_5 and 120 lb/da TSS.	1. Preapplication meeting	1/15/73		2B8162	.05			
	2. Work with State to influence Hot Springs to apply for grant FY-73.	3/15/73		2B8162	.05			
	3. Award Grant	6/15/73		2B6117 2B8316	.2 .5	1.8 .1	.1	
	4. Review specifications, review environmental statement, complete construction.		10/1/74	2B3149 2B8162	.4	.1	.2	
	5. Prepare O&M manual. Assist State in monitoring O&M program. Operator training.	10/1/74		2B8163	0.1	0.1	.2	

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES INITIATION	DATES COMPLETION	PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - MOS) FY 73	FY 74	FY 75	FY 76
Hot Springs (continued)	6. Assist the city thru the state in establishing a monitoring station on Fall River below Hot Springs also test quality of effluent discharged after new treatment facility begins operation.	10/1/74	Continuing	2B2147	..	..	.1	0.05
SPEARFISH								
Facilities are overloaded and not adequately treating the wastes of the city. Discharge is adversely affecting water quality of Spearfish Creek, a high quality stream. Presently operating under a conditional state permit. 105 ac stabilization pond is presently under construction. Expected waste load reductions are 250 lb/da BOD_5 and 187 lb/da TSS.	1. Complete construction of stabilization pond.		11/15/72	2B8162 2B8316	.2 0.1			
	2. Assist the city through the state to establish monitoring stations on Spearfish Creek above and below facility and monitor.	12/1/72	Continuing	2B2147	.05	.05	.05	
	3. Prepare O&M manual. Assist state in carrying out an O&M program. Operator training.	11/1/72	Continuing	2B8163	0.2	0.1		
KEYSTONE- MT. RUSHMORE SANITARY DISTRICT								
There is no direct discharge to a Watercourse. Present types of facilities are unsewered privies, cesspools, septic tanks with soil adsorption systems. The disposal methods employed throughout the District are inadequate and are creating ground and surface water quality problems plus a hazard to public health. Original plans were to construct a regional treatment facility at Harney and an interceptor line from the facilities to Mt. Rushmore and a partial collection system in	1. Work with city and state to influence Keystone to apply for a construction grant.	1/1/73		2B8162	.1			
	2. Review construction specifications for Mt. Rushmore facility.		3/15/73	2B6116	.1			
	3. Pre-application hearing for Keystone.	3/1/73		2B8162	.1			
	4. Approve application.	4/1/73		2B8316 2B8162 2B3149	.1 .1 .5			

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TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

SITUATION ANALYSIS	RECOMMENDED ACTIONS BY SUB TASK & ORGANIZATION RESPONSIBILITY	DATES INITIATION	DATES COMPLETION	PROGRAM ELEMENT	MANPOWER REQUIRED (PROF - MAN - MOS) FY 73	FY 74	FY 75	FY 76
KEYSTONE (continued)								
Keystone. However, present plans call for separate treatment facilities for Keystone and Mt. Rushmore. Performance specifications for the Mt. Rushmore treatment facility have been reviewed and approved by EPA. Construction is scheduled for completion in July 1973.	5. Award Grant	7/1/73		2B8316		.1		
	6. Begin construction	9/1/73		2B8162		.5		
	7. Complete Construction & Inspection		9/1/74	2B8162 2B8316		.2 .1	.2 .1	
	8. Monitor effluent. Assist Keystone thru the state to establish necessary monitoring stations.	9/1/74	Continuing	2B2147		.05	.05	
	9. Prepare O&M manuals. Assist state in carrying out an O&M program. Operator training.	9/1/73	Continuing	2B8163	0.1	.2	01	
INDUSTRIAL DISCHARGES								
Wastewater flows and concentrations can be reduced and in some cases eliminated through the implementation of the Permit Program thru letters of commitment* from the various affected industries. Our goal will be to require industries to meet water quality standards, to discharge no effluents that have not had the equivalent of secondary treatment, and not to discharge toxic or potentially toxic materials. This will require the processing nine letters of commitment. The industrial discharges from Homestake Mining Co. will be treated by the Lead-Deadwood Sanitary District facilities.								

* These actions will be changed to permit actions immediately under the new legislation as soon as guidelines are available.

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

Situation Analysis	Recommended Actions By Sub Task & Organization Responsibility	Dates Initiation	Dates Completion	Program Element	Manpower Required (Prof.- Man - Mos.) FY 73	FY 74	FY 75	FY 76
MINES DEVELOPMENT INC.								
Seepage from uranium & vanadium waste storage ponds enter Cottonwood Creek and the Cheyenne River in the vicinity of the mill causing localized water quality degradation. Water and wind transport of unstabilized sand tailings are potential sources of water quality degradation and increased levels of radiation exposure to the resident population (via wind transport of particulates and radon-222 emissions).	1. Sealed storage for liquid uranium and vanadium mill wastes.	10/15/71	1/1/73	3B2124	0.6			
	2. Work with state and industry to develop a plan for the stabilization and ultimate disposal of sand tailings.	10/15/71	2/15/72	3B2124		0.6		
	3. Water quality monitoring program EPA/State.	7/1/72	Continuing	3B2124	0.2	0.2		
	4. EPA progress report to Conferees.		11/72	3B2123	0.05			
SOUTH DAKOTA CEMENT PLANT								
Septic Tank overflow into an unnamed tributary to Rapid Creek causing potential health hazard.	1. Recommend connection to Rapid City sewer.		10/31/72	3B2124	0.4			
	2. Receive letter of commitment.		1/1/73	3B2124	0.5			
	3. Actual connection.		6/1/73	3B2124	0.3			

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TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

Situation Analysis	Recommended Actions By Sub Task & Organization Responsibility	Dates Initiation	Dates Completion	Program Element	Manpower Required (Prof.- Man - Mos.) FY 73	FY 74	FY 75	FY 76
USAF ELLSWORTH AFB								
Storm runoff from aircraft dock area. Have applied for a permit.	1. Develop effluent criteria to reduce solids and other potentially toxic substances.	3/1/73	9/1/73	3B2124 2B1143 2B6116 2B3149	0.4 0.1 	0.3 0.2 0.2		
	2. Meet with AF officials to develop commitment letter.	6/1/73	3/1/74	3B2124 2B6116		0.3 0.10		
	3. Monitor effluent to see if in compliance.	3/1/74	3/1/75	3B2124		0.5	0.2	
SPEARFISH NATIONAL FISH HATCHERY								
There is a potential for discharge of nutrients and organic materials to Spearfish Creek.	1. Develop effluent criteria to maintain or improve present quality of effluent.	1/1/73	4/1/73	2B3149 3B2124 2B1143 2B6116	0.2 0.5 0.2 			
	2. Commitment letter.	4/1/73	6/1/73	3B2124 2B6116	0.8 0.1			
	3. Monitor effluent to see if in compliance.	6/1/73	6/1/74	3B2124		0.5	0.2	
KIESLING OIL COMPANY								
Potential for discharge of oil and solids to Mush Creek.	1. Develop effluent criteria to reduce the discharge of dissolved solids and maintain or reduce other potentially toxic materials.	6/1/73	12/1/73	3B2124 2B1143 2B3149		0.5 0.2 0.2		
	2. Commitment letter.	12/1/73	3/1/74	3B2124		0.3		
	3. Monitor effluent to see if in compliance.	3/1/73	12/1/74	3B2124		0.4	0.2	

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

Situation Analysis	Recommended Actions By Sub Task & Organization Responsibility	Dates Initiation	Dates Completion	Program Element	Manpower Required (Prof.- Man - Mos.) FY 73	FY 74	FY 75	FY 76
BIRDSALL SAND & GRAVEL ORAL SAND PLANT								
Potential porblem from TSS discharges into Cheyenne River from sand washing operation.	1. Develop effluent criteria for suspended solids to include sedimentation ponds.	1/1/73	4/1/73	3B2124 2B1143 2B3149	0.5 .2 .2			
	2. Letter of commitment.	4/1/73	6/1/73	3B2124	0.3			
	3. Monitor effluent to see if in compliance.	6/1/73	6/1/74	3B2124		0.5	0.2	
DAKOTA BLOCK CO. RAPID CITY								
Potential TDS problem.	1. Effluent criteria to maintain or reduce solids if determined to be necessary.	1/1/73	4/1/73	2B1143 3B2124 2B3149	0.2 0.5 0.2			
	2. Letter of Commitment.	4/1/73	6/1/73	3B2124	0.3			
	3. Monitor effluent to see if in compliance.	6/1/73	6/1/74	3B2124		0.5	0.2	
PETE LIEN & SONS, INC. RAPID CITY								
Discharging phosphorus and dissolved solids.	1. Develop standards to maintain or reduce nutrient and TDS loadings Commitment letter.	1/1/73	4/1/73	2B3149 3B2124 2B1143	.2 0.5 .2			
	2. Commitment letter.	4/1/73	6/1/73	3B2124	.3			
	3. Monitor effluent to see if in compliance.	6/1/73	6/1/74	3B2124		0.4	0.2	

TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

Situation Analysis	Recommended Actions By Sub Task & Organization Responsibility	Dates Initiation	Dates Completion	Program Element	Manpower Required (Prof.- Man - Mos.) FY 73	FY 74	FY 75	FY 76
AIR PRODUCTS & CHEMICALS - RAPID CITY								
Cooling water used on industrial O_2 compressors. Potential increase of dissolved salts.	1. Develop standards to maintain or improve water quality.	4/1/73	9/1/73	3B2124 2B1143 2B3149	0.4	0.2 0.2 0.2		
	2. Letter of commitment.	9/1/73	12/1/73	3B2124		0.3		
	3. Monitor effluent to see if in compliance.	12/1/73	12/1/74	3B2124		0.5	0.2	
3. 3(c) Grant								
A Section 3(c) grant was awarded to the BHCSD, October 1, 1970 for a three-year period ending October 1, 1973. The project is designed to meet the requirements of 18CFR601 for the Basin plan. The grantee submitted a project amendment proposal earlier this year. This proposal has as its objective development of methods to control pollution from rural residential developments in a mountain environment. Accepted by the grantee 7/12/72.	1. Provide continuous Regional office monitoring of project until its completion.	Ongoing	10/1/73	2B1143 2B3149 2B2146	0.4 1.5 0.1	0.4 0.5 0.1		
	2. EIS preparation.	9/1/73	10/1/73	2B3150 2B6117	0.3	0.3 2.0		
	3. Utilize information developed by this grant in other similar areas throughout the region.							
4. Surveillance & Monitoring								
(a) Field study was undertaken to determine the location and composition of buried tailings materials including abandoned tailings piles along Whitewood Creek, the Belle Fourche River, and the Cheyenne R. An aerial reconnaissance survey to establish locations of deposits and piles was completed on 2/1/72.	1. Report to Conferees	Ongoing	11/72	3B1123	0.05			

Situation Analysis	Recommended Actions By Sub Task & Organization Responsibility	Dates Initiation	Dates Completion	Program Element	Manpower Required (Prof.- Man - Mos.) FY 73	FY 74	FY 75	FY 76
Field sampling of instream deposits and along-shore tailings was completed 7/1/72.								
(b) Cooperative (EPA/State) well water sampling program to document any impact of waste discharges from the Homestake Mining Company on ground water quality (parameters-zinc, copper, mercury, selenium, cyanide, and arsenic). The quarterly sampling of approximately 20 wells is in the process of being completed.	1. Analytical work remaining should be completed.	Ongoing	11/72	3B1123	1.0			
	2. Report to Conferees.	Ongoing	11/72	3B1123	0.05			
(c) Comprehensive one-year study of mercury in the fish & bottom sediment of the Cheyenne Arm of Gahe Reservoir. A cooperative fish sampling program between EPA/Food & Drug Administration/ Bureau of Sport Fisheries & Wildlife/ State was developed. Field sampling was completed 9/29/72.	1. Complete analytical work and report to Conferees.		1/1/73	3B1123	1.75			
	2. Recommend restriction of fishing in reservoir if necessary.		2/1/73	3B1123	0.05			
(d) In accordance with Conference recommendations, EPA has initiated weekly monitoring of radiological and chemical concentrations for: (1) the mouth of Cottonwood Creek; (2) Cheyenne River upstream at the U.S. Highway 18 bridge, (3) Cheyenne River downstream at the State Highway 71 bridge, and (4) Cottonwood Creek upstream from Mines Development, Inc. Presently samples are collected by Edgemont resident under contract to EPA. Radiation analysis done in Cincinnati. Region VIII does other chemistry.	1. Continue supervising field sampling and providing analytical work.	Ongoing	Until State gets capability.	3B1123	2.0	2.0		
	2. Progress report to Conferees.	Ongoing	11/72	3B1123	0.05			
	3. Unscheduled sampling that may be required.			3B1123		2.5		

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TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

Situation Analysis	Recommended Actions By Sub Task & Organization Responsibility	Dates		Program Element	Manpower Required (Prof.- Man - Mos.)			
		Initiation	Completion		FY 73	FY 74	FY 75	FY 76
Information concerning public water supplies, especially in regard to treatment types and capacities, is inadequate.	1. Conduct inventory of all public water supplies including information population served, treatment, production and capacity.	11-72	6-73		2.0			

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TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

Situation Analysis	Recommended Actions By Sub Task & Organization Responsibility	Dates Initiation	Dates Completion	Program Element	Manpower Required (Prof.- Man - Mos.) FY 73	FY 74	FY 75	FY 76
5. Manpower Training								
Inadequate O&M of municipal WWTP is in part due to lack of training of the operators. Provision of required numbers, and levels of competance of operating personnel will require manpower planning and training programs. All plants discussed previously will benefit from these actions.	1. Support WWTP operator training programs in Wyoming and South Dakota.		Continuing	2B7160	0.2	0.5	0.5	
	2. In-house manpower planning for WWTP.		Continuing	2B7160	0.3	0.3	0.3	
	3. Work with Wyoming and South Dakota on development of manpower planning function.		Continuing	2B7160	0.2	0.3	0.3	
	4. Work with State of Wyoming on development of certification program.		Continuing	2B7160	0.1	0.2	0.2	
	5. Coordinate Field Study Training Program for WWTP operators.		Continuing	2B7160	0.1	0.2	0.2	
6. Public Affairs								
The general public is not aware of the many things that it may do to help abate water pollution. The purpose of this program element is to create public awareness and support for programs designed to abate and control pollution in the Cheyenne River Basin.	1. Coordinate closely with State agency information personnel, as well as those in the private sector who have an interest in environmental improvement to insure that information efforts are coordinated in terms of theme and purpose.	1/1/73	Continuing	5T2215	0.5	0.25	0.25	0.25
	2. Utilize film documentaries and 60-second television spots to stress the need for quality water for all intended uses.	7/1/73	Continuing	5T2215	0.5	0.25	0.25	0.25

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TABLE III - INTEGRATED BASIN TACTICAL SOLUTION AND RESOURCE REQUIREMENTS

Situation Analysis	Recommended Actions By Sub Task & Organization Responsibility	Dates Initiation	Dates Completion	Program Element	Manpower Required (Prof.- Man - Mos.) FY 73	FY 74	FY 75	FY 76
Public Affairs - Continued	3. Publish articles in various publications.	1/1/73	Continuing	5T2215		0.25	0.50	0.25
	4. Assist the BHCSD develop a slide-sound program on water pollution problesm in the basin and possible solution. This is in accordance with requirements of the 3(c) grant now underway.	1/1/73	10/1/73	5T2215	1.5	0.25		
7. 1971 Flood Response During the night of June 9-10, 1972 disastrous floods caused intensive damage and loss of life in Rapid City. Lesser impacts occurred over a four county area within the Cheyenne River Basin. The Mountain-Plains Federal Regional Council was assigned the responsibility for coordinating intermediate and long-term recovery efforts of Federal agencies. As part of an overall State-Federal management team a Federal task force was given the primary responsibility of coordinating Federal inputs and working with State and local representatives. EPA is a member of both the council and the task force.	1. Continue participation on Flood recovery Task Force.	Ongoing	Indefinite	2B3149	0.9	0.3		
	2. Coordinate EPA response with other major programs in area, i.e. (1) other elements of basin Accomplishment Plan; (2) 3(c) water quality management planning study; (3) solid waste management planning study; and (4) Western South Dakota Enforcement Conference.	Ongoing	Indefinite	2B3149	0.2	0.2		
	3. Augment 3(c) study to analyze wastewater treatment needs identified by State and local redevelopment council and to evaluate flood recovery programs in terms of basin wide water quality objectives.	11/1/72	1/1/73	2B3150	0.1			

SECTION G

POINT SOURCE REDUCTIONS REQUIRED

TABLE IV - WATER QUALITY IMPROVEMENT THROUGH COMPLETION OF ACTION ITEMS

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: LEAD-DEADWOOD SANITARY DISTRICT

WQ PARAMETERS	AGGREGATED ACTION ITEMS REQUIRED FOR REDUCTION	PRESENT WASTE LOADS (24 hr - ave)	WASTE LOADS REDUCTION (SEE TABLE III)					PRESENT WATER QUALITY	ANTICIPATED WATER QUALITY (7-day - 10 year flow) (SEE WQS & TABLE III)				
	(From TABLE III)	(See TABLE I)	FY 72	FY 73	FY 74	FY 75	FY 76	(See TABLE II)	FY 72	FY 73	FY 74	FY 75	FY 76
BOD_5	meet with BuRec to 1. discuss future role and planned activities.	1226#				251		Class B Stream 1/			Class A	2/	
TSS	2. complete memo agreement with BuRec.	5,471,845#		5,470,870#									
CN	3. complete plans and specifications	268#				268							
	4. State and Federal approval of plans and specifications												
	5. award contract												
	6. complete construction and place project in operation												
	7. monitor												
	8. O & M												

1/ Class B stream is one that has no designated water use and no standards.

2/ Class A stream has designated use and appropriate standards.

TABLE IV - WATER QUALITY IMPROVEMENT THROUGH COMPLETION OF ACTION ITEMS

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES : HILL CITY

WATER QUALITY PARAMETERS	AGGREGATED ACTION ITEMS REQUIRED FOR REDUCTION	PRESENT WASTE LOADS (24 hr - ave)	WASTE LOAD REDUCTION (SEE TABLE III)					PRESENT WATER QUALITY	ANTICIPATED WATER QUALITY (7-day - 10 year flow) (SEE MRS & TABLE III)				
	(From TABLE III)	(See TABLE I)	FY 72	FY 73	FY 74	FY 75	FY 76	(See TABLE II)	FY 72	FY 73	FY 74	FY 75	FY 76
BOD_5	1. complete construction of wastewater facility	50#		35#				Water quality station not available.					
TSS	2. monitor	28#		13#									
	3. O & M												

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TABLE IV - WATER QUALITY IMPROVEMENT THROUGH COMPLETION OF ACTION ITEMS

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES : CUSTER, S.D.

WATER QUALITY PARAMETERS	AGGREGATED ACTION ITEMS REQUIRED FOR REDUCTION	PRESENT WASTE LOADS (24 hr - ave)	WASTE LOAD REDUCTION (SEE TABLE III)					PRESENT WATER QUALITY	ANTICIPATED WATER QUALITY (7-day - 10 year flow) (SEE MMS & TABLE III)				
	(From TABLE III)	(See TABLE I)	FY 72	FY 73	FY 74	FY 75	FY 76	(See TABLE II)	FY 72	FY 73	FY 74	FY 75	FY 76
BOD_5	1. complete WWT facility	162#			90#			Water quality station not available.					
TSS	2. monitor	114#			79#								
	3. O & M												

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TABLE IV - WATER QUALITY IMPROVEMENT THROUGH COMPLETION OF ACTION ITEMS

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: MINES DEVELOPMENT, INC. @ Edgemont

WATER QUALITY PARAMETERS	ACCELERATED ACTION ITEMS REQUIRED FOR REDUCTION	PRESENT WASTE LOADS (24 hr - ave)	WASTE LOAD REDUCTION (SEE TABLE III)					PRESENT WATER QUALITY	ANTICIPATED WATER QUALITY (7-day - 10 year flow) (SEE MAP & TABLE III)				
	(From TABLE III)	(See TABLE I)	FY 72	FY 73	FY 74	FY 75	FY 76	(See TABLE II)	FY 72	FY 73	FY 74	FY 75	FY 76
Acidity	1. recommend to company to seal ponds & stabilize piles.	Waste loads are from seepage & not readily measurable.											
Uranium-radium	2. Follow up on Western South Dakota Enforcement Conference recommendations												
Iron-vanadium													
Tailings													

TABLE IV - WATER QUALITY IMPROVEMENT PROJECTS THROUGH SCHEDULING OF ACTION ITEMS

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: SOUTH DAKOTA CEMENT PLANT, Rapid City

WATER QUALITY PARAMETERS	ADMINISTRATIVE ACTION ITEMS REQUIRED FOR REDUCTION	PRESENT WASTE LOADS (24 hr - ave)	WASTE LOADS REDUCTION (SEE TABLE III)					PRESENT WATER QUALITY	ANTICIPATED WATER QUALITY (7-day - 10 year flow) (SEE WLA & TABLE III)				
	(From TABLE III)	(See TABLE I)	FY 72	FY 73	FY 74	FY 75	FY 76	(See TABLE II)	FY 72	FY 73	FY 74	FY 75	FY 76
BOD_5	recommend connection to Rapid City sewer,	3#			3			30			< 30		
TSS		19#			19			773			< 773		
TDS		257#			257			935			< 935		
Fecal Coli		20,000/100			20,000 100 ml.			12,200/100 ml			< 12,200 / 100 ml.		

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TABLE IV - WATER QUALITY IMPROVEMENT AND SCHEDULE FOR COMPLETION OF ACTION ITEMS

INDIVIDUAL SOURCES OR CATEGORY OF SOURCE: NISLAND

WATER QUALITY PARAMETERS	ACTION ITEMS REQUIRED FOR REDUCTION (From TABLE III)	PRESENT WATER QUALITY LOADS (See TABLE I)	SCHEDULE FOR COMPLETION (See TABLE III)					PRESENT WATER QUALITY (See TABLE II)	ANTICIPATED WATER QUALITY (7-day - 10 year flo (See TABLE & FIGURE ###)				
			FY 72	FY 73	FY 74	FY 75	FY 76		FY 72	FY 73	FY 74	FY 75	FY 76
BOD_5	1. Get city to apply for a construction grant.	26#				22#		Water quality monitoring station not available.					
TSS	2. award grant	22#				18#							
	3. complete construction												
	4. O & M												
	5. monitor												

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TABLE IV - WATER QUALITY IMPROVEMENT THROUGH COMPLETION OF ACTION ITEMS

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: HOT SPRINGS

WQ PARAMETERS	ACCELERATED ACTION ITEMS REQUIRED FOR REDUCTION	PRESENT WASTE LOADS (24 hr - ave)	WASTE LOAD REDUCTION (SEE TABLE III)					PRESENT WATER QUALITY	ANTICIPATED WATER QUALITY (7-day - 10 year flo (SEE MAS & TABLE III)				
	(From TABLE III)	(See TABLE I)	FY 72	FY 73	FY 74	FY 75	FY 76	(See TABLE II)	FY 72	FY 73	FY 74	FY 75	FY 76
BOD_5	1. preapplication meeting	117#				59		Water quality information not available.					
TSS	2. apply for grant	178#				120							
	3. award grant												
	4. complete project												
	5. O & M												
	6. monitor												

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TABLE IV - WATER QUALITY MANAGEMENT THROUGH COMPLETION OF ACTION ITEMS

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: SPEARFISH, S.D.

WATER QUALITY PARAMETERS	AGGREGATED ACTION ITEMS REQUIRED FOR REDUCTION	PRESENT WASTE LOADS (24 hr - ave)	WASTE LOADS REDUCTION (SEE TABLE III)					PRESENT WATER QUALITY	ANTICIPATED WATER QUALITY (7-day - 10 year flo (SEE WQS & TABLE III)				
	(From TABLE III)	(See TABLE I)	FY 72	FY 73	FY 74	FY 75	FY 76	(See TABLE II)	FY 72	FY 73	FY 74	FY 75	FY 76
BOD_5	1. complete WWT facility	313#		250				Water quality monitoring stations non-existent					
TSS	2. monitor	250#		187									
	3. O & M												

8.
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TABLE IV - WATER QUALITY IMPROVEMENT THROUGH COMPLETION OF ACTION ITEMS

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: STURGIS, S.D.

WATER QUALITY PARAMETERS	ACCELERATED ACTION PLANS REQUIRED FOR REDUCTION	PRESENT WASTE LOADS (24 hr - ave)	WASTE LOADS REDUCTION (SEE TABLE III)					PRESENT WATER QUALITY	ANTICIPATED WATER QUALITY (7-day - 10 year flow) (SEE TMS & TABLE III)				
	(From TABLE III)	(See TABLE I)	FY 72	FY 73	FY 74	FY 75	FY 76	(See TABLE II)	FY 72	FY 73	FY 74	FY 75	FY 76
BOD_5	1. Improve O & M practices	67#			12#			Water quality station non-existent.					
TSS	2. monitor	91#			25#								

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TABLE IV - WATER QUALITY IMPROVEMENT THROUGH COMPLETION OF ACTION ITEMS

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: ELLSHORTH AFB

WATER QUALITY PARAMETERS	AGGREGATED ACTION ITEMS REQUIRED FOR REDUCTION	PRESENT WASTE LOADS (24 hr - ave)	WASTE LOADS REDUCTION (SEE TABLE III)					PRESENT WATER QUALITY	ANTICIPATED WATER QUALITY (7-day - 10 year flow) (SEE MDS & TABLE III)				
	(From TABLE III)	(See TABLE I)	FY 72	FY 73	FY 74	FY 75	FY 76	(See TABLE II)	FY 72	FY 73	FY 74	FY 75	FY 76
TDS	1. Effluent standards	335			335			935			<935		
TSS	2. letter of commitments	28			12#			773			<773		
	3. monitor												

TABLE IV - WATER QUALITY IMPROVEMENT THROUGH COMPLETION OF ACTION ITEMS

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: SPEARFISH NATIONAL FISH HATCHERY

QUALITY PARAMETERS	AGGREGATED ACTION ITEMS REQUIRED FOR REDUCTION	PRESENT WASTE LOADS (24 hr - ave)	WASTE LOADS REDUCTION (SEE TABLE III)					PRESENT WATER QUALITY	ANTICIPATED WATER QU (7-day - 10 year flo (SEE MAS & TABLE III)				
	(From TABLE III)	(See TABLE I)	FY 72	FY 73	FY 74	FY 75	FY 76	(See TABLE II)	FY 72	FY 73	FY 74	FY 75	FY 76
BOD_5	1. develop effluent criteria	95#			85			No water quality monitoring of this stream					
TSS	2. commitment letter to maintain or reduce present quality of effluent	329			319								
	3. monitor												

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9
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TABLE IV - WATER QUALITY IMPROVEMENT THROUGH COMPLETION OF ACTION ITEMS

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: KIESLING OIL CO. OSAGE, Wy.

WATER QUALITY PARAMETERS	AGGREGATED ACTION ITEMS REQUIRED FOR REDUCTION	PRESENT WASTE LOADS (24 hr - ave)	WASTE LOADS REDUCTION (SEE TABLE III)					PRESENT WATER QUALITY	ANTICIPATED WATER QUALITY (7-day - 10 year flo (SEE NOS & TABLE III)				
	(From TABLE III)	(See TABLE I)	FY 72	FY 73	FY 74	FY 75	FY 76	(See TABLE II)	FY 72	FY 73	FY 74	FY 75	FY 76
TDS	1. develop effluent criteria	10#			10			No monitoring station available.					
	2. letter of commitment												
	3. monitor												

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TABLE IV - WATER QUALITY IMPROVEMENT THROUGH COMPLETION OF ACTION ITEMS

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: BIRDSALL SAND & GRAVEL, Rapid City

WATER QUALITY PARAMETERS	AGGREGATED ACTION ITEMS REQUIRED FOR REDUCTION	PRESENT WASTE LOADS (24 hr - ave)	WASTE LOADS REDUCTION (SEE TABLE III)					PRESENT WATER QUALITY	ANTICIPATED WATER QUALITY (7-day - 10 year flow) (SEE NOTE & TABLE III)				
	(From TABLE III)	(See TABLE I)	FY 72	FY 73	FY 74	FY 75	FY 76	(See TABLE II)	FY 72	FY 73	FY 74	FY 75	FY 76
BOD_5	1. develop effluent criteria	11#			1			30		<30			
TSS	2. letter of commitment	6,242			6,142			773		<773			
TDS	3. Monitor	781#			200			935		<935			

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TABLE IV - WATER QUALITY IMPROVEMENT THROUGH COMPLETION OF ACTION ITEMS

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: DAKOTA BLOCK CO., Rapid City

WATER QUALITY PARAMETERS	AGGREGATED ACTION ITEMS REQUIRED FOR REDUCTION	PRESENT WASTE LOADS (24 hr - ave)	WASTE LOADS REDUCTION (SEE TABLE III)					PRESENT WATER QUALITY	ATTAINED WATER QUALITY (7-day - 10 year flo (SEE WQS & TABLE III				
	(From TABLE III)	(See TABLE I)	FY 72	FY 73	FY 74	FY 75	FY 76	(See TABLE II)	FY 72	FY 73	FY 74	FY 75	FY 76
TDS	1. develop effluent criteria	6#			6#			935		<935			
	2. commitment letter to maintain or reduce amount of pollutants												
	3. monitor												

TABLE IV - WATER QUALITY IMPROVEMENT THROUGH COMPLETION OF ACTION ITEMS

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: PETE LIEN & SONS, INC. Rapid City

WATER QUALITY PARAMETERS	AGGREGATED ACTION ITEMS REQUIRED FOR REDUCTION	PRESENT WASTE LOADS (24 hr - ave)	WASTE LOADS REDUCTION (SEE TABLE III)					PRESENT WATER QUALITY	ANTICIPATED WATER QU. (7-day - 10 year flo (SEE WQS & TABLE III)				
	(From TABLE III)	(See TABLE I)	FY 72	FY 73	FY 74	FY 75	FY 76	(See TABLE II)	FY 72	FY 73	FY 74	FY 75	FY 76
TDS	1. develop effluent criteria	88#						935		<935			
	2. letter of commitment to not degrade w.g.												
	3. monitor												

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TABLE IV - WATER QUALITY IMPROVEMENT THROUGH CONSIDERATION OF ACTION ITEMS

INDIVIDUAL SOURCE OR CLUSTER OF SOURCES: AIR PRODUCTS & CHEMICALS

WATER QUALITY PARAMETERS	AGGREGATED ACTION ITEMS REQUIRED FOR REDUCTION	PRESENT WASTE LOADS (24 hr - ave)	WASTE LOADS REDUCTION (SEE TABLE III)					PRESENT WATER QUALITY	ASSIMILATIVE CAPACITY (7-day - 10 year flo (SEE WQS & TABLE III				
	(From TABLE III)	(See TABLE I)	FY 72	FY 73	FY 74	FY 75	FY 76	(See TABLE II)	FY 72	FY 73	FY 74	FY 75	FY 76
TDS	1. develop effluent standards	28#			28			935		<935			
	2. letter of commitment to not increase												
	3. monitor												

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